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AUTHOR Crowe, Michael R.; And Others
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ABSTRACT

This implementation guide describes the philosophy of BASICS, a set of integrated materials developed to assist teachers, administrators, and counselors in bridging vocational and academic skills. It provides guidelines and strategies in workshop format for implementing the program in a school. The guide is organized around three topics. The rationale for BASICS presents the philosophy underlying the development of the material. Emphasis is given to the joint effort approach for strengthening students' basic skills. The rationale for BASICS implementation presents the background and issues involved in beginning the BASICS program and the various stages of implementation. Considerations include the leadership role required for a successful program and the various stages of implementation. The BASICS implementation section contains specific implementation procedures for the person who coordinates the BASICS program. The section contains a listing of BASICS products, a description of the products, and workshop outlines for inservice sessions for teachers and others in specific BASICS topics. Appendixes include a typology of standards, concerns voiced in California about vocational education, and three statements supporting joint vocational-academic effort. (YLB)

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Bridging Vocational and Academic Skills

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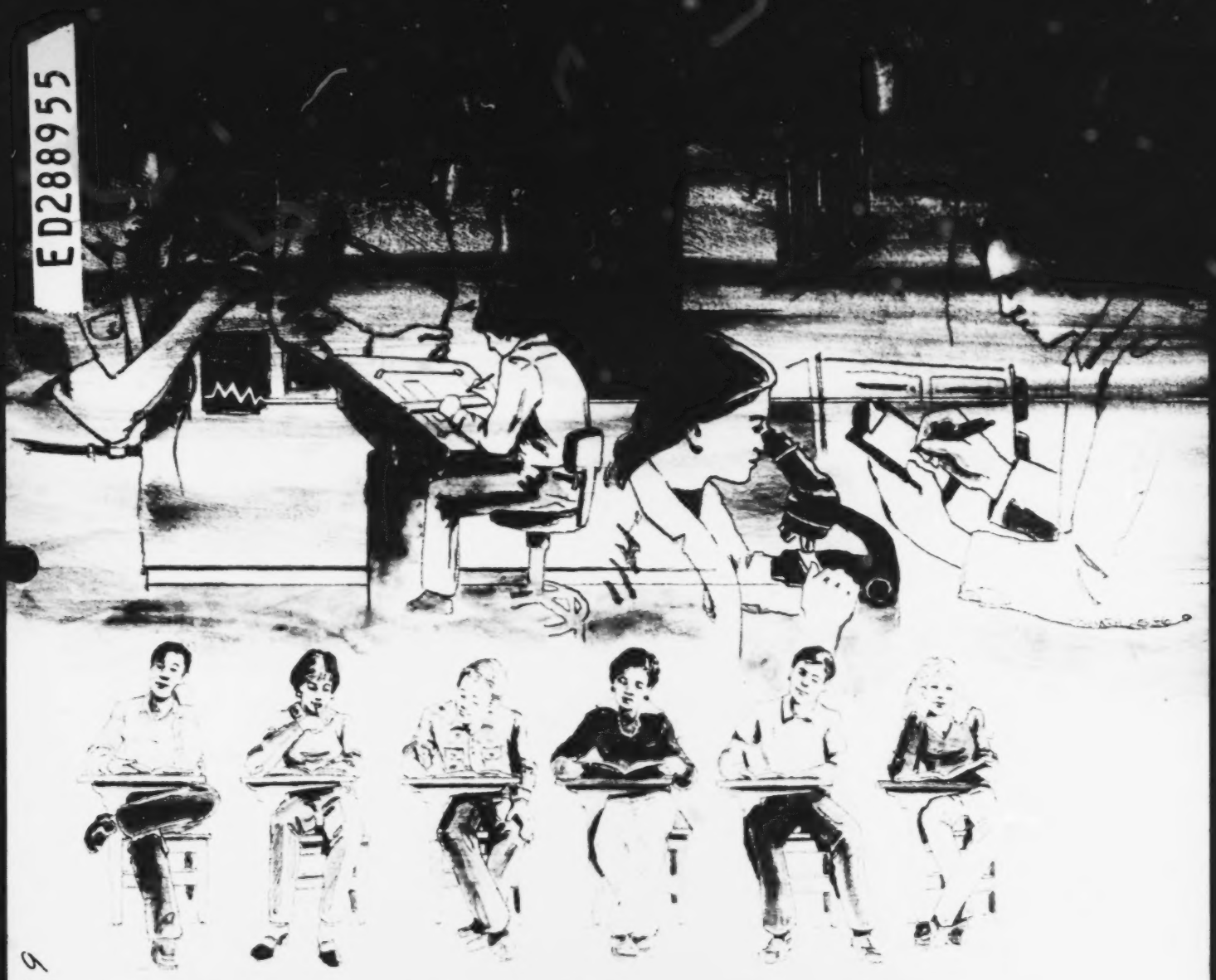

Implementation Guide

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For further information contact:

Program Information Office
National Center for Research
in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210-1090

Telephone: (614) 486-3655 or (800) 848-4815
Cable: CTVOCEDOSU/Columbus, Ohio
Telex: 8104821894

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IMPLEMENTATION GUIDE

BASICS: BRIDGING VOCATIONAL AND ACADEMIC SKILLS

Michael R. Crowe
Sandra G. Pritz
June P. Veach

The National Center for Research in Vocational Education
The Ohio State University
Columbus, Ohio 43210

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FOREWORD

Converging factors point to a need to look for new pathways to vocational education excellence: the public's increased expectations regarding academic outcomes of education, heightened by a number of national reports; increased graduation requirements and declining vocational enrollments in many states; the emphasis in the Perkins Act on the need for strengthening academic foundations; and business and industry requests that entry-level employees have a more thorough knowledge of the basic academics they will need to apply in their vocational fields. Those concerned agree that students need to have stronger basic academic skills as they leave secondary education programs—stronger academic skills for graduation, for work, and for life.

The National Center has sponsored diverse efforts dealing with basic skills in vocational education, from research to development to dissemination. Much has been learned about vocational students' basic skills learning problems. In order to make connections between research and practice, The National Center has, through synthesis and development, prepared an integrated package for teacher use, reinforcing this information with practical applications gleaned from teachers' repertoires across the nation. The products in the package are aimed toward enabling vocational and academic teachers to strengthen the academic component of vocational programs through joint effort.

The **BASICS** package provides resources in five focus areas: research findings, teaching techniques, instructional materials, instructional strategies, and support roles. The resources are organized in three looseleaf guidebooks for flexible use. An accompanying videotape provides an orientation to the topic and to the package.

The Bridger's Guide orients administrators, counselors, teachers, and employers to the purpose and application of **BASICS;** individual roles are explained, resources identified, and implementation guidelines and strategies outlined in workshop format. Individual components to the guide are as follows:

- **Implementation Guide** describes the philosophy of **BASICS** and provides guidelines for implementing the program.
- **Support Roles for Basic Skills** describes the role of administrators, counselors, employers, and families in a program for improving basic skills.
- **Primer of Exemplary Strategies** provides teachers with examples of other teachers' successful efforts and diverse approaches.
- **Roadsigns from Research** (posters and brochures) highlights key research findings of interest to those involved in strengthening basic skills.

Targeted Teaching Techniques provides vocational and academic teachers with assessment, planning, and management tools to improve students' basic skills. Individual components are as follows:

- **Technique for Management: Time for Learning** lays foundations for more effective basic skills instruction through studying the use of classroom time.

- **Technique for Remediation: Peer Tutoring** discusses the planning, implementation, and evaluation of peer tutoring programs to strengthen students' basic skills.
- **Technique for Computer Use: Software Evaluation** describes a procedure for joint evaluation of educational software for basic skills instruction.
- **Technique for Individualization: The Academic Development Plan** guides school staff through a systematic identification of individual student needs and steps to meet those needs.
- **Techniques for Joint Effort: The Vocational-Academic Approach** describes teaching techniques that vocational and academic teachers can use jointly to improve students' basic skills.

Developing an Instructional Program provides teachers with practical and theoretical information on the development or selection of appropriate applied basic skills instructional materials. Individual components are as follows:

- **Instructional Materials Development** discusses the prerequisites of materials development, alternative curriculum types, and guidelines for materials development and review.
- **Supplemental Instructional Resources** identifies sources of basic skills instructional materials for use with vocational students.
- **Instructional Assistance in Specific Basic Skills** prepares vocational teachers to help students gain reading, writing, oral communication, and math skills.

The National Center wishes to acknowledge the leadership provided to this effort by Dr. Robert E. Taylor, recently retired Executive Director. Appreciation is extended to the following individuals who served as a panel of experts to assist staff in planning strategy and recommending document content: Eugene Bottoms, Consultant to the Southern Association of Colleges and Schools; Michele Brown, Vocational Supervisor, Idaho Falls School District, ID; Alton Crews, Superintendent, Gwinnett County Public Schools, GA; Roger Faulkner, Instructor-Coordinator, Great Oaks Joint Vocational School District, OH; and Darrell Parks, Director, Division of Vocational and Career Education, Ohio Department of Education.

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Chester K. Hansen
Acting Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

Students need to have strong academic skills as they leave secondary education programs—strong academic skills for graduation, for work, and for life. Studies of education have advocated a renewed emphasis on academic excellence and on teaching basic skills, and many states have responded by increasing graduation requirements. Employers want to hire graduates who have a strong foundation of basic skills and who can apply those skills to solve problems in an increasingly technological world that demands great flexibility of workers. Finally, students need to master basic skills to participate successfully in our complex society.

Educators in many places are responding to this challenge in ways that have positive outcomes for their students and, ultimately, for themselves. Evidence of these efforts has been gathered by the National Center for Research in Vocational Education and combined with the evidence from research on how students learn basic skills. The evidence relates to the need to link academic skills instruction to applications in vocational tasks for successful student learning. The challenge can best be met by a joint effort of vocational and academic teachers to bridge the gap between vocational and academic programs and to make students aware of the bonding between academic skills and vocational tasks.

The National Center has, through synthesis and development, prepared an integrated package for use by administrators, teachers, and counselors. The products in the package are aimed toward strengthening the academic component of vocational programs through a joint effort of vocational and academic teachers and all who support them. This **BASICS** *Implementation Guide* provides information to help a school begin a **BASICS** program.

The Implementation Guide is organized around three topics:

- Rationale for **BASICS**
- Rationale for **BASICS** implementation
- **BASICS** implementation

The rationale for **BASICS** presents the philosophy underlying the development of the materials. Emphasis is given to the joint-effort approach for strengthening students' basic skills. The rationale for **BASICS** implementation section presents the background and issues involved in beginning the **BASICS** program. The last section contains a listing of **BASICS** products, a description of the products, and workshop outlines for inservicing teachers and others in specific **BASICS** topics.

Introduction

Welcome to **BASICS**, a new set of integrated materials developed to assist teachers in bridging vocational and academic skills. **BASICS** combines targeted teaching techniques with approaches for developing curriculum that will strengthen vocational students' basic skills. **BASICS** is flexible. Its components can be selected so that each school can create a unique program that meets the vocational and academic needs of students. The **BASICS** implementation guide provides information to help a school begin a **BASICS** program.

In addition to an orientation videocassette and four posters, the **BASICS** materials are contained in three loose-leaf notebooks. This format permits customizing the program to the specific needs of the school. **BASICS** materials are organized so that either an individual teacher or a group of teachers can easily obtain the information when they need it.

Although the **BASICS** products complement each other, each product was designed to be used individually to achieve its purpose. This feature is useful as a school begins to plan its programs. For example, teachers can quickly begin strengthening students' basic skills using one **BASICS** activity since they will not have to read all the products to begin the program. As the **BASICS** program progresses, teachers can select more activities as they are needed.

The *Implementation Guide* is organized around three topics:

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Rationale for Basics

What Is the Problem?

Several factors have converged to make changes in vocational education programs a necessity: the public's increased expectations regarding academic outcomes of educational activities, heightened by a number of national reports; increased graduation requirements and declining vocational enrollments in many states; the emphasis in the Perkins Act on the need for strengthening academic foundations; and business and industry requests that entry-level employees have a more thorough knowledge of the basic academics they will need to apply in their vocational fields.

None of these reasons imply failure on the part of teachers—vocational and academic—to "do their job." Rather, these factors are part of a collective set of circumstances that point to a need to look for new pathways to vocational education excellence. Those concerned agree that students need to have stronger academic skills as they leave secondary education programs—stronger academic skills for graduation, for work, for life, and for society.

Academic Skills for Graduation

The problem of students' basic skills deficiencies is a national concern for both general and vocational educators. Since the sixties, educators have seen test scores decline, reflecting deficiencies in basic skills. This "rising tide of mediocrity"—to quote the National Commission on Excellence in Education—finally captured widespread national attention in 1983 when several reform documents were published, including *A Nation at Risk*. Many of these documents advocate a renewed emphasis on academic excellence and on teaching basic skills. (See appendix A for a summary of several of the reports' recommendations.)

These studies stressing the needs in education have led states to respond in a number of ways, such as the following:*

- Forty-two states' solutions have been to increase certification standards.
- Forty have increased the number of academic courses required for graduation.
- Thirty-two have changed curriculum standards required for graduation.
- Thirty-two have changed curriculum standards or textbook adoption procedures.
- Twenty-four have lengthened the school day or year. (Brannon 1985)

NOTE: The material in this document has been largely excerpted and adapted from *Integration of Academic and Vocational-Techical Education: An Administrator's Guide*. Consortium for the Development of Professional Materials for Vocational Education, 1987.

*As of September, 1984

Many of these responses involve changes in graduation requirements. The changed requirements demand that basic skills be strengthened and also that schools be accountable, giving evidence that specific skills are being taught in specific courses so that students can qualify for graduation.

Increasing academic course work creates a problem for vocational students: the effort to meet the new graduation requirements leaves them limited time to participate in vocational programs. Thus, enrollments in many vocational programs have been decreasing.

For students who are "at risk" in terms of their decision to stay in school long enough to graduate, the new academic demands are frightening and discouraging. Since many at-risk students have tended not to do well in more abstract academic courses but have done better in more concrete vocational courses, the problem is compounded. (Appendix B illustrates with one state's concerns what seems typical for many.)

Academic Skills for Work

Employers are among those who have been pointing out the deficiencies in basic skills of those they employ or would like to employ. Clearly, employers want to hire graduates who have a strong foundation of basic skills. The major thrust for employers' demands comes from the changing nature of work—a phenomenon with many facets. One is that declining U.S. productivity, coupled with increasing competition abroad, points to a need to have workers who will contribute more effectively on the job.

Second, partly because of technological change, occupations requiring few or no basic skills are rapidly disappearing, whereas newly created occupations require workers to use reading, writing, and computation at a fairly high level of skill in the solving of daily problems on the job (Sticht and Mikulecky 1984). Technological change also means that people may be expected to change jobs relatively often. People with strong academic skills and an understanding of broad principles are in a much better position to be flexible in transferring those skills to new applications than are people who have only narrow (and soon obsolete) occupational skills. Employers are stressing the need for problem-solving and decision-making skills and for the ability to apply academic concepts to specific tasks.These represent higher-level cognitive demands than are often made in the classroom.

In a survey conducted at Pensacola Junior College, employers said they wanted graduates to possess direct job skills (e.g., welding) because these skills equip an individual to *begin* a job. They also wanted other, related skills (e.g., safety-mindedness, human relations, communications) because these skills equip a new worker to *keep* the job (Walker 1980).

The following statement by Roger D. Semerad, U.S. Assistant Secretary of Labor, sums up the concern that is being voiced repeatedly:

> We're appalled by the fact that we are graduating 750,000 to a million kids from high school a year who are functionally illiterate, and an equal number are dropping out or are being pushed out of our school system. If we don't take some action now, we're going to have a very big pool of unskilled citizens who at best will be underemployed and probably will find it very difficult to get a job because of the rising skill needs. (*The Chronicle of Higher Education* 1986, p. 39)

And the Carnegie Forum on Education and the Economy is quoted as linking the citizens' future directly to society's future:

> In the future, high-wage-level societies will be those whose economies are based on the use of a wide scale of very highly skilled workers, backed up by the most advanced technologies available. (Ibid. 1986, p. 38)

Academic Skills for Life

Students' mastery of basic skills is essential to their successful participation in our society. These skills are not only crucial to demonstrating employability and occupational competency, acquiring further education and training, and attaining upward mobility, but also neces-

sary for functioning in a complex society. Students need more than job training to live full, satisfying, productive lives. As expressed by the Association for Supervision and Curriculum Development in their Resolution 10 (ASCD 1986) for a balanced curriculum:

> A limited interpretation of the basics required in education threatens a balanced and high quality curriculum for students living in our complex society. The curriculum should be broad enough to offer suitable educational opportunities for all students relative to their academic, social, psychological, and health needs and abilities. ASCD recognizes that further development and emphases are needed in teaching skills of problem solving, reasoning, conceptualization, and analysis, which are among the neglected basics needed in tomorrow's society. (p. 1)

What Are the Skills Needed?

Any discussion of what basic skills are needed soon leads to the conclusion that one needs to specify for *what* and for *whom* before the term "basic" has real meaning; the answer will differ depending on such factors as the occupation, the time frame, and the location.

However, there seems to be agreement that the following general skills are necessary:

- *Entry-level job skills*—More than entry-level skills are not, in most cases, required or even desirable. There is no *time* to teach more than that. Employers don't want more than that. And since skills become obsolete so quickly today, it is counterproductive to teach more than that. Retraining, perhaps five to seven times, will characterize careers of the future—lifelong learning.

- *Common-core basic skills*—Math, science, and communication (reading, writing, listening, speaking) skills need to be taught through instruction, remediation, reinforcement, and application. Computer literacy is another common-core skill that is becoming basic.

- *Job-specific basic skills*—Students training for certain occupations may require additional academic course work. For example, students in electronics or health occupations may need to take specific science courses.

- *Employability skills*—The skills needed to get a job include interviewing, conducting a job search, developing a resume, and completing a job application form.

- *Employment skills*— The skills needed to keep a job and advance in the occupation (or move laterally if needed) include interpersonal skills, educability skills, thinking skills, problem solving, decision making, the ability to cope with change, risk taking, innovativeness, entrepreneurship, and leadership. Also included are the many affective elements desired by employers: punctuality, reliability, safety-mindedness, perseverance, cooperation, loyalty, enthusiasm, and confidence.

Although vocational instructors will recognize most of these skills as being a part of their present programs, the message from employers and others is clear: More is needed! Present programs have not been judged to be inferior—and specific programs are acknowledged to be superior—but overall, vocational education has often been judged to be ho-hum, so-so, mediocre. That should be a challenge. Vocational educators have always sought excellence; by linking more closely with academic colleagues, by pooling respective strengths, vocational educators can greatly enhance the quality of education for all students—even to the point of excellence.

How Can Educators Best Respond?

Having acknowledged that the problem is real, educators—both vocational and academic—in many places across the nation have decided and are deciding that they can respond to the challenge in ways that have positive outcomes for students and, ultimately, for themselves.

Fortunately, there is prodigious evidence that when basic skills are linked with and applied to technical skills, students are willing and able to master them. Therefore it is important that academic and vocational learning be viewed as complements, never substitutes, for one another. The unhealthy schism that often exists between academic and vocational programs can be bridged for the betterment of all students if it is recognized that each has much to offer the other and that the new educational challenges of our day can best be met through concerted action. The challenge is twofold:

-To strengthen the academic basis of vocational education

-To strengthen the connection between concept learning and application in academic education

The challenge can best be met by a joint effort between vocational and academic teachers to design educational programs that apply the academic skills in the context of an occupational area. The thrust toward a joint vocational-academic effort has several underlying premises:

- *Academic basic skills are embedded in vocational tasks.* Both academic and vocational teachers are needed to identify exactly where academic concepts are used in vocational courses.
- *Vocational tasks provide for realistic use of academic basic skills.* Often academic textbooks do not provide sufficient opportunities for students to practice such skills. Connecting academic learning with application strengthens students' basic skills and builds the skills they need for problem solving and decision making.

  Clearly, students should learn to apply academic concepts in ways that have real-world consequences. It is important to capitalize on the natural environment of the vocational setting where students can apply the academic concepts.

- *Neither academic basic skills nor vocational skills should be taught in isolation from each other.* All teachers need to make students aware of the bonding between academic basic skills and vocational tasks. This requires a fusing of vocational and academic education. As Rupert Evans (1971) says,

  > One of the first ways to make vocational an their lives ahead. Since we do not want to tell students an untruth, we need to make sure that all education really is relevant. (p. 58)

- *Differences in students' learning style and in teachers' teaching style may have a significant impact on successful basic skills acquisition.* If some students learn more successfully through an academic, abstract approach and others through an applied, concrete approach, schools had better provide for both.

A number of educators have spoken convincingly on the need for a joint vocational-academic effort. Appendix C contains three statements that should be read by anyone who is not already committed to the idea that a joint vocational-academic effort is important to the strengthening of students' basic skills. Commitment to the idea must come first. Then the question of how this can be achieved can be addressed.

Rationale for Basics Implementation

The joint vocational-academic effort will, and should, take a somewhat different form in each school. Schools, districts, and states differ widely in the degree to which the idea of a joint effort on behalf of basic skills improvement has already taken root. Therefore, the style and rate of implementation will differ also.

For the improvement effort to be successful, the program must fit into and further the multiple other objectives and programs already in place. In fact, many of the **BASICS** products are designed to expand on current programs through a new approach and thus to capitalize on them in a renewed way.

Flexible implementation schemes are important. Responsible educators must be able to respond with targeted solutions to needs identified in their own situation. Educators must also be free to consider a range of options to determine which will be most likely to succeed in that setting.

Although the **BASICS** package is amenable to flexible implementation, and parts of the package can be selected and used separately with good results, the parts of the package are related to each other, with each part contributing to a synergistic whole. The instrument of synergism is clearly the joint vocational academic effort. Activities not specifically included in this package may very well complement the package and extend the synergism. The last word on what can be accomplished through the vocational-academic approach to strengthen basic skills has yet to be written.

In summary, the problem of students having inadequate levels of basic skills in the context of today's demands did not develop suddenly. Neither will programs designed to strengthen students' academic skills be likely to show dramatic immediate results. Therefore, it is important that those involved be aware of the stages of implementation and understand them to be part of a process leading in a positive direction. Change is rarely easy, but it is eased by a sense of addressing the problem with clarity of purpose and a commitment to make it work.

Stages of Implementation

Effective implementation of the joint vocational-academic approach depends on the same factors that have been identified as important to any program to improve education. These factors are involved in four stages: initiation, initial implementation, complete implementation, and institutionalization.* Those using the **BASICS** package may already be beyond the first stage.

*These stages and their factors are adapted from Odden and Anderson (1986).

Initiation

The initiation stage is the time when forces are converging for change. Important factors include the following:

- External pressure for accountability—which may come from state or local sources, and which underscores a school's sense of the need to change. Many schools are feeling this pressure from the state level where there has been response to the concerns articulated at many levels.

- Effective awareness training—an effort to share the awareness of a need to change and to promote a common clarity of purpose. Educators need to believe that the change can result in improved student academic achievement, and that collaboration is key to that change.

- Perception of fit—a sense that there is a good match between a selected program and the needs at the school. The selection may have been made at the state or district level, but educators need to see that it can improve their own situation, and it helps if they are integrally involved in the decision to take part in the program.

- An advocate—a person or a support group who understands the program, believes in it, and can obtain the support of others, from the school board and superintendent to school personnel. Leadership from the top is important at this stage and later for coordination of the program.

The climax of the initiation stage is the decision to commit to the program and to make it work.

Initial Implementation

When teachers and administrators begin to implement the program, consideration of some success variables can pave the way. Such factors include the following:

- Development of district strategies—coordination at the district level of tasks ranging from communication to maintain school board support, to hiring substitute teachers to allow teacher planning time.

- Creation of an implementation team—a group that represents a variety of roles (administrators, vocational and academic teachers, counselors) but that can develop a sense of unity about the program among themselves and among others.

- Early results—some limited objectives that can be achieved within a short period of time. This serves to reinforce continued effort, and the input is useful in planning expansion of the program.

- Provision of a variety of resources—beyond money; such resources as technical assistance and clerical support are important.

- School orchestration—coordination of activities and strategies by the implementation team.

The implementation team needs to plan carefully for program success. Their responsibilities include—

- determining staff development needs,

- planning staff involvement and setting the stage for staff commitment,

- determining how to monitor progress,

- deciding how discretionary funds will be allocated, and

- developing leaders/trainers in various aspects of the program.

Full Implementation

Full implementation means that program activities are underway, but does not imply that all participants are completely comfortable in changed roles using new techniques. During this stage, a healthy sequence of events would be the following:

- Teachers, administrators, counselors, and others involved in the various program

activities are working at applying new techniques and performing new duties.

- Through ongoing communication and leadership (including observation, feedback, assistance, and coaching where indicated), participants share insights and solutions to problems and encourage one another.

- Participants feel some degree of mastery of new skills and comfort in new roles.

- Improved student outcomes are noted and shared (for example, evidence of a more positive learning climate or changed student attitudes as well as stronger academic achievement)

- Enhanced commitment of those involved is derived from the positive results.

Keys to this sequence of events are careful planning in the prior stages, ongoing leadership, sustained support, and open communication channels.

Institutionalization

As individuals—teachers, administrators, students—recognize positive outcomes, they are likely to apply new energy to institutionalizing the program as part of the standard operating procedures of the school. During this period, what is working well can become organizationally grounded so that individual outcomes translate to school outcomes. This is also a period for adjusting parts of the program to better fit the school situation and possibly to expand the program from limited beginnings.

Developing a Strategy for BASICS Use

The **BASICS** package is like a tool kit in that it provides a selection of helpful resources for building a program or working on a problem situation. For the tools to be most effective, the plan or strategy for their use must fit the situation and contribute to specific desired outcomes. In developing a strategy for **BASICS** use, decisions should be made about several issues. These include the "driving forces" behind use of the package, the program goals and expected outcomes, and program staff.

The "Driving Forces"

The **BASICS** package is being used as a vehicle. What is it a vehicle for? A thoughtful analysis of the reasons for wanting to use the package will lead to a clarity of purpose that is important for development of commitment and for shaping the implementation.

In considering the question, think about the catalysts for action, the driving forces, the burning issues. These are the factors that people care about enough to base action on them. A personal investment in or "ownership" of the program will, for many people, depend on identifying these factors clearly. Some of the driving forces identified by several states, are these:

- The need to help vocational students meet academic graduation requirements—For example, Vermont and California, like many other states, have adopted increased high school graduation requirements. In these states, identification of academic skills embedded in vocational courses has led to establishment of some alternative means of meeting graduation requirements.

- A high rate of illiteracy—For example, in Kentucky, the Joint Academic Vocational Approach grew out of a need to counteract a high adult illiteracy rate.

- Response to business and industry—For example, the Great Oaks program in Ohio was spurred by an employer study that showed a need for employees to have better academic skills.

- Dropout prevention—For example, in California, many districts feel that vocational modes for academic skill instruction are important in retaining potential dropouts.

Other factors/issues include the recognition of a need for remediation strategies, the need of a unifying theme for program improvement, and decreased vocational enrollments. Where a mix of several of these, and perhaps other factors, is operating, it is wise to enumerate them. In another section of this guide, a crosswalk list helps to identify parts of the **BASICS** implementation that can address these needs.

Program Goals and Expected Outcomes

Goals for the program should be set to reflect the level of commitment suitable for the school, and the expected outcomes will be a reflection of the goals set. Those seeking some specific targeted outcomes of a limited nature can apply a short-term strategy at low cost and with a minimum of structural or process change. This "surface" approach can also be adopted as a means of getting started and seeing some results before committing further.

The five *Targeted Teaching Techniques* in the **BASICS** package provide resources for immediate application on a limited basis. They also provide for more extended applications. The *Roadsigns from Research* posters and brochures, available for use with little preparation, are a good starting point for raising awareness of the issues.

Schools seeking substantial impact on academic achievement levels of students must be prepared to opt for the longer-term "deep" approach. They must analyze their systems and rethink and rebuild in some areas. For example, analysis of the curriculum to identify academic skills embedded in vocational courses is a significant step toward improved integration of instruction, but it takes time. Developing or reworking instructional materials is costly but effective.

Once the school has decided on the approach to use, plans should be made to evaluate the success of the program in producing the expected outcomes.

Program Staff

The decision to use a gradual staged approach involves fewer staff or at least fewer staff hours than the decision to implement the program comprehensively. In either case, decisions must be made about which teachers are to be involved and how.

Should teachers volunteer or be assigned to work on the program? Given the participants, should they be assigned to particular program roles or volunteer for them? In answering these questions, serious thought should be given to the strengths and needs of individual staff members.

Both vocational and academic teachers are needed for the joint effort. It should be noted that, as used in the **BASICS** package, the term "academic teacher" means a teacher certified to teach traditional academic courses. Its use is not meant to imply that vocational teachers do not also teach academic skills.

Other Considerations for Implementation

BASICS' *Integration of Academic and Vocational-Technical Education: An Administrator's Guide* contains four chapters (chapters 3-6) in part two on implementation strategies. The next chapter in this guide contains specific information about how to use package components and some workshop outlines to help get the implementation underway.

Basics Implementation

The **BASICS** package is designed to help strengthen basic skills by using a joint vocational-academic approach to link basic skills with and apply them to technical skills. To facilitate implementation of this approach through use of the **BASICS** package, this section includes a listing of each **BASICS** product. Next is a description of the components, followed by a series of workshop outlines for initiating involvement in the implementation process.

BASICS Product Listing

The form the joint vocational-academic effort takes in each school, district, or state will differ, as will the style and rate of implementation. To accommodate these varying needs, the **BASICS** products are designed to be flexible and offer a range of options for use. Whereas parts of the package can be selected and used separately with good results, the parts of the package are related to each other. A product listing is included next to show the **BASICS** components and their relationship. Each component is listed with a description of its content, physical characteristics (videocassette, notebook, guidebook, etc.), and notes for use. Related **BASICS** products are listed for each component.

Description of the BASICS Components

The previous section described the BASICS package pieces as they have been grouped for convenient packaging and use in schools. Before starting to implement the package, it would also help to be familiar with the conceptual framework of the package. **BASICS** contains five conceptual elements:

- *Roadsigns from Research*
- *Targeted Teaching Techniques*
- *Instructional Program Development*
- *Support Roles for Basic Skills*
- *Primer of Exemplary Strategies*

An *Orientation Videocassette* and the *Implementation Guide* are designed to bind all these elements together. The videocassette conveys the intent of the package and the theme that pervades each of the components, namely that the strengthening of students' basic skills is best achieved by a joint effort between vocational and academic teachers to design a program that applies the academic basic skills in the context of an occupational area. The *Implementation Guide* deals with how the package components can be used, singly and in combinations, to achieve that purpose. Figure 1 shows the conceptual framework just described, and it is appropriate for workshop use. A description of each of the five conceptual elements follows, so as to flesh out that framework.

BASICS PRODUCT LISTING

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
1. Introducing BASICS: Bridging Vocational and Academic Skills	A videotape orientation that provides an introduction to **BASICS** and its components	1/2-inch videocassette (VHS)	Use with teachers, other school personnel, parents, employers, and community groups.
2. Four Posters	**Focus:** Dropouts **Caption:** Stay in the Race. Win with Basic Skills **Focus:** Business/Industry **Caption:** To Fill These Shoes, in space, below the sea, or anywhere in between, You Need Basic Skills **Focus:** Special Populations **Caption:** Light Your Future. Learn Basic Skills **Focus:** Learning/Teaching Styles **Caption:** Explore Learning & Teaching Styles. Discover Basic Skills	16" x 20" two-color posters	Use with teachers or other school personnel to introduce **BASICS** resources. Use with students to motivate to basic skills. Use as part of inservice to describe the research base for the **BASICS** resources. Each poster can be used with one of the roadsigns from research brochures. **Related BASICS products:** Four miniposters for use with Roadsigns from Research. Roadsigns from Research 1 Dropouts Perils and Profiles. Whys and Wherefores. Hard Times and Handiwork. Roadsigns from Research 2 Business/Industry. Road signs from Research 3 Special Populations. Roadsigns from Research 4 Learning/Teaching Styles
3. THE BRIDGER'S GUIDE	Contains materials for coordinating the **BASICS** resources and for involving individuals who can support the effort	Three-ring notebook	Contains items 4-23 described below
4. **BASICS** Implementation Guide	Presents the philosophy, structure, and use of **BASICS**. Describes the roles of program coordinator and other school staff and offers workshop outlines for successful implementation of the resources	Guidebook	
5. Primer of Exemplary Strategies	Provides teachers with examples of other teachers' successful efforts and diverse approaches to infusing basic skills instruction in different classroom situations. Techniques are organized by basic skill(s) emphasized, by vocational service area, and by special population student needs	Guidebook	Contacts for additional information are given. **Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Supplemental Instructional Resources

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
6. **BASICS** Information Support Roles: Administrator (Guide #1)	Describes the use of the Administrator's Guide on Improving Basic Skills in the context of the **BASICS** resources	Related tabbed page in Bridger's Guide Two-page black-line master in Bridger's Guide	Make copies for use with administrators when in-servicing **BASICS**. Use with the guide titled Improving the Basic Skills of Vocational-Technical Students: an Administrator's Guide (number 7, below).
7. Improving the Basic Skills of Vocational-Technical Students: An Administrator's Guide	Offers information and guidelines to help vocational administrators initiate program changes to strengthen basic skills. Describes types of basic skills programs, staffing structures, and effective instructional approaches	Guidebook	Use with administrators to help them understand that strengthening basic skills requires everyone's support, at every level, across disciplines and departments. **Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Management: Time for Learning. Roadsigns from Research 1: Dropouts Perils and Profiles. Whys and Wherefores. Hard Times and Handiwork. Roadsigns from Research 2: Business/Industry. Roadsigns from Research 3: Special Populations. Roadsigns from Research 4: Learning/Teaching Styles
8. **BASICS** Information Support Roles: Administrator (Guide #2)	Describes the use of the Administrator's Guide on Integration of Academic and Vocational-Technical Education in the context of the **BASICS** resources	Related tabbed page in Bridger's Guide Two-page black-line master in Bridger's Guide	Make copies for use with administrators when in-servicing **BASICS**. Use with the guide titled Integration of Academic and Vocational-Technical Education: an Administrator's Guide (number 9 below)
9. Integration of Academic and Vocational-Technical Education: An Administrator's Guide	Provides vocational administrators with several vignettes of joint efforts between academic and vocational teachers to strengthen the basic skills of vocational students.	Guidebook	Use with administrators to help them realize that joint efforts are not easy to carry out and that a successful program requires their leadership and support

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
9. *Continued*			**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Roadsigns from Research 1 Dropouts. Perils and Profiles. Whys and Wherefores. Hard Times and Handiwork. Roadsigns from Research 2 Business Industry. Roadsigns from Research 3 Special Populations. Roadsigns from Research 4 Learning/Teaching Styles
10. **BASICS** Information Support Roles: Counselor	Describes the use of the guidance module in the context of the **BASICS** resources	Related tabbed page in Bridger's Guide Two-page black-line master in Bridger's Guide	Make copies for use with guidance counselors when in-servicing **BASICS**. Use with the Module CG, C-9, titled *Provide for the Basic Skills* (number 11 below).
11. Provide for the Basic Skills	Helps counselors to perform essential tasks and to fill the roles that commonly support a basic skills program. The module's advocacy of "learning assistance counselors" fits the concept of joint effort between vocational and academic teachers.	Module/Guidebook	Use with guidance counselors to help them contribute to a joint effort to strengthen basic skills. **Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Individualization: The Academic Development Plan (ADP). Instructional Materials Development
12. Four mini-posters for use with Roadsigns from Research	• Dropouts—Stay in the Race. Win with Basic Skills • Business/Industry—To Fill These Shoes, in space, below the sea, or anywhere in between, You Need Basic Skills • Special Populations—Light Your Future. Learn Basic Skills • Learning/Teaching Styles—Explore Learning & Teaching Styles. Discover Basic Skills	Four 8 1/2 x 11-inch black-line masters	Use with teachers when introducing the research base for **BASICS** (numbers 13-18 below). Note that the mini-posters are also found as large two-color posters. **Related BASICS Products:** Four posters. Roadsigns from Research 1 Dropouts. Perils and Profiles. Whys and Wherefores. Hard Times and Handiwork. Roadsigns from Research 2 Business/Industry. Roadsigns from Research 3 Special Populations. Roadsigns from Research 4 Learning/Teaching Styles

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
13. Roadsigns from Research 1: Dropouts—Perils and Profiles	Helps teachers make an assessment of the dropout problem as it relates to basic skills deficiencies	Six page brochure black-line master	Blank space is provided on brochure master for school district and/or contact person to identify themselves. **Related BASICS Products:** Technique for Remediation: Peer Tutoring. Four posters. Four miniposters
14. Roadsigns from Research 1: Dropouts—Whys and Wherefores	Summarizes the impact of personal, family, and school factors on dropout-prone youth especially as it relates to basic skills deficiencies	Six page brochure black-line master	Blank space is provided on the master for individual school districts to identify themselves as part of the **BASICS** program. **Related BASICS Products:** Technique for Remediation: Peer Tutoring. Four posters. Four miniposters
15. Roadsigns from Research 1: Dropouts—Hard Times and Handiwork	Summarizes what happens to dropouts with emphases on pregnancy, employment, crime, and health. Discusses the economic and educational tolls on others from dropping out	Six page brochure black-line master	Blank space is provided on the master for individual school districts to identify themselves as part of the **BASICS** program. **Related BASICS Products:** Techique for Remediation: Peer Tutoring. Four posters. Four miniposters
16. Roadsigns from Research 2: Business/Industry	Clarifies the perspective of business and industry on the importance of basic skills competency in the work force. Problems concerning basic skills that companies encounter are cited as well as the entry-level skills they look for.	Six page brochure black-line master	Blank space is provided on the master for individual school districts to identify themselves as part of the **BASICS** program. **Related BASICS Products:** Four posters. Four miniposters
17. Roadsigns from Research 3: Special Populations	Summarizes the basic skills problems that are prevalent among special populations as well as the factors that make these problems difficult to solve. Changes are recommended that can make teachers more effective in helping these students overcome basic skill deficiencies.	Eight page brochure black-line master	Blank space is provided on the master for individual school districts to identify themselves as part of the **BASICS** program. **Related BASICS Products:** Technique for Remediation: Peer Tutoring. Four posters. Four miniposters
18. Roadsigns from Research 4: Learning/Teaching Styles	Summarizes the implications of both learning and teaching styles for basic skills acquisition. Several suggestions are given on how teachers can use information about learning/teaching styles to reach students who have basic skills problems and for whom traditional methods may be inadequate.	Twelve page brochure black-line master	Blank space is provided on the master for individual school districts to identify themselves as part of the **BASICS** program. **Related BASICS Products:** Four posters. Four miniposters

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
19. **BASICS** Information Assist Students in Achieving Basic Reading Skills (Module M-1)	Describes the reading skills module for use by teachers in the context of the **BASICS** resources	Two-page black-line master Related tabbed page in Developing An Instructional Program Notebook	Make copies for use with teachers. Module M-1 is located in the Developing An Instructional Program Notebook.
20. **BASICS** Information Assist Students in Developing Technical Reading Skills (Module M-2)	Describes the technical reading module for use by teachers in the context of the **BASICS** resources	Two-page black-line master Related tabbed page in Developing An Instructional Program Notebook	Make copies for use with teachers. Module M-2 is located in the Developing An Instructional Program Notebook.
21. **BASICS** Information Assist Students in Improving Their Writing Skills (Module M-3)	Describes the writing skills module for use by teachers in the context of the **BASICS** resources	Two-page black-line master Related tabbed page in Developing An Instructional Program Notebook	Make copies for use with teachers. Module M-3 is located in the Developing An Instructional Program Notebook.
22. **BASICS** Information Assist Students in Improving Their Oral Communication Skills (Module M-4)	Describes the oral communication skills module for use by teachers in the context of the **BASICS** resources	Two-page black-line master Related tabbed page in Developing An Instructional Program Notebook	Make copies for use with teachers. Module M-4 is located in the Developing An Instructional Program Notebook.
23. **BASICS** Information Assist Students in Improving Their Math Skills (Module M-5)	Describes the math skills module for use by teachers in the context of the **BASICS** resources	Two-page black-line master Related tabbed page in Developing An Instructional Program Notebook	Make copies for use with teachers. Module M-5 is located in the Developing An Instructional Program Notebook.

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
24 TARGETED TEACHING TECHNIQUES	Provides vocational and academic teachers with assessment, planning, and management tools for a comprehensive and effective approach to improve students' basic skills	Three-ring notebook	Contains items 25-31 described below
25 Techniques for Joint Effort: The Vocational-Academic Approach	Describes teaching techniques that vocational and academic teachers can use jointly to improve students' basic skills	Guidebook	**Related BASICS Products:** Roadsigns from Research 1 Dropouts Perils and Profiles. Whys and Wherefores. Hard Times and Handiwork. Roadsigns from Research 2 Business/Industry. Roadsigns from Research 3 Special Populations. Roadsigns from Research 4 Learning/Teaching Styles. Technique for Management Time for Learning. Technique for Remediation Peer Tutoring. Technique for Computer Use Software Evaluation Technique for Individualization: The Academic Development Plan (ADP). Instructional Materials Development. Supplemental Instructional Resources
26 Technique for Management Time for Learning	Provides guidelines and techniques to analyze the amount of classroom time devoted to basic skills instruction and other learning tasks	Guidebook	**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach
27 Technique for Remediation: Peer Tutoring	Presents a complete plan for setting up, implementing, and evaluating a peer tutoring program to strengthen students' basic skills	Guidebook	**Related BASICS Products:** Roadsigns from Research 1 Dropouts Perils and Profiles. Whys and Wherefores. Hard Times and Handiwork Roadsigns from Reseach 3 Special Populations. Techniques for Joint Effort: The Vocational-Academic Approach
28 Technique for Computer Use: Software Evaluation	Describes a procedure for vocational and academic teachers to jointly evaluate educational software for students' basic skills development	Guidebook	**Related BASICS Products:** Roadsigns from Research 4 Learning/Teaching Styles. Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Individualization: The Academic Development Plan (ADP)

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
29. Technique for Individualization: The Academic Development Plan (ADP)	Offers step-by-step guidelines for school staff to identify individual student needs and procedures for meeting those needs	Guidebook	**Related BASICS Products:** Provide for the Basic Skills Counselor. Roadsigns from Research 1: Dropouts Perils and Profiles Whys and Wherefores Hard Times and Handiwork. Roadsigns from Research 2: Business/Industry. Roadsigns from Research 3: Special Populations. Roadsigns from Research 4: Learning/Teaching Styles. Techniques for Joint Effort: The Vocational-Academic Approach. Instructional Materials Development
30. Targeted Teaching Technique Audiocassette #1: The Vocational Academic Approach	Presents the key information from the vocational-academic approach guide on audiotape	One 60-minute audiocassette	**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach
31. Targeted Teaching Technique Audiocassette #2: Peer Tutoring	Presents the key information from the peer tutoring guide on audiotape	One 60-minute audiocassette	**Related BASICS Products:** Technique for Remediation: Peer Tutoring
32. DEVELOPING AN INSTRUCTIONAL PROGRAM	Provides teachers with practical and theoretical information on development or selection of appropriate applied basic skills instructional materials	Three-ring notebook	Contains items 33-39
33. Instructional Materials Development	Discusses the steps for preparing to develop materials, development of alternative types of curricula, and guidelines for reviewing materials and managing the development process	Guidebook	**Related BASICS Products:** Techniques for Joint Effort: The Vocational Academic Approach. Technique for Management: Time for Learning Technique for Individualization: The Academic Development Plan (ADP)

BASICS PRODUCT LISTING—*Continued*

PRODUCT NAME	DESCRIPTION	PHYSICAL CHARACTERISTICS	NOTES
34. Supplemental Instructional Resources	Identifies sources of basic skills instructional materials available for use with vocational students	Guidebook	**Related BASICS Products:** Primer of Exemplary Strategies. Techniques for Joint Efforts: The Vocational-Academic Approach
35. Assist Students in Achieving Basic Reading Skills (Module M-1)	Gives teachers practical assistance for developing instruction to meet vocational students' basic reading needs. Provides information on techniques such as teaching technical vocabulary and providing practical reading knowledge	Module	**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Computer Use: Software Evaluation
36. Assist Students in Developing Technical Reading Skills (Module M-2)	Gives teachers practical assistance for developing instruction to meet vocational students' technical reading needs. Provides information on topics such as comprehension and interpretation of graphic material	Module	**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Computer Use: Software Evaluation. Instructional Materials Development
37. Assist Students in Improving Their Writing Skills (Module M-3)	Gives teachers practical assistance for developing instruction to meet vocational students' needs for writing skills. Provides information on topics such as individualizing writing instruction and correcting writing errors	Module	**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Computer Use: Software Evaluation. Instructional Materials Development
38. Assist Students in Improving Their Oral Communication Skills (Module M-4)	Gives teachers practical assistance for developing instruction to meet vocational students' needs for oral communication	Module	**Related BASICS Products:** Techniques for Joint Effort: The Vocational-Academic Approach. Technique for Remediation: Peer Tutoring. Technique for Computer Use: Software Evaluation. Technique for Individualization: The Academic Development Plan (ADP)
39. Assist Students in Improving Their Math Skills (Module M-5)	Gives teachers practical assistance for developing instruction to meet vocational students' needs for math skills. Includes information on topics such as teaching math in the context of the occupational skill and using visual and tactile means to reinforce math concepts	Module	**Related BASICS Products:** Technique for Joint Effort: The Vocational-Academic Approach. Technique for Computer Use: Software Evaluation. Technique for Individualization: The Academic Development Plan (ADP). Instructional Materials Development

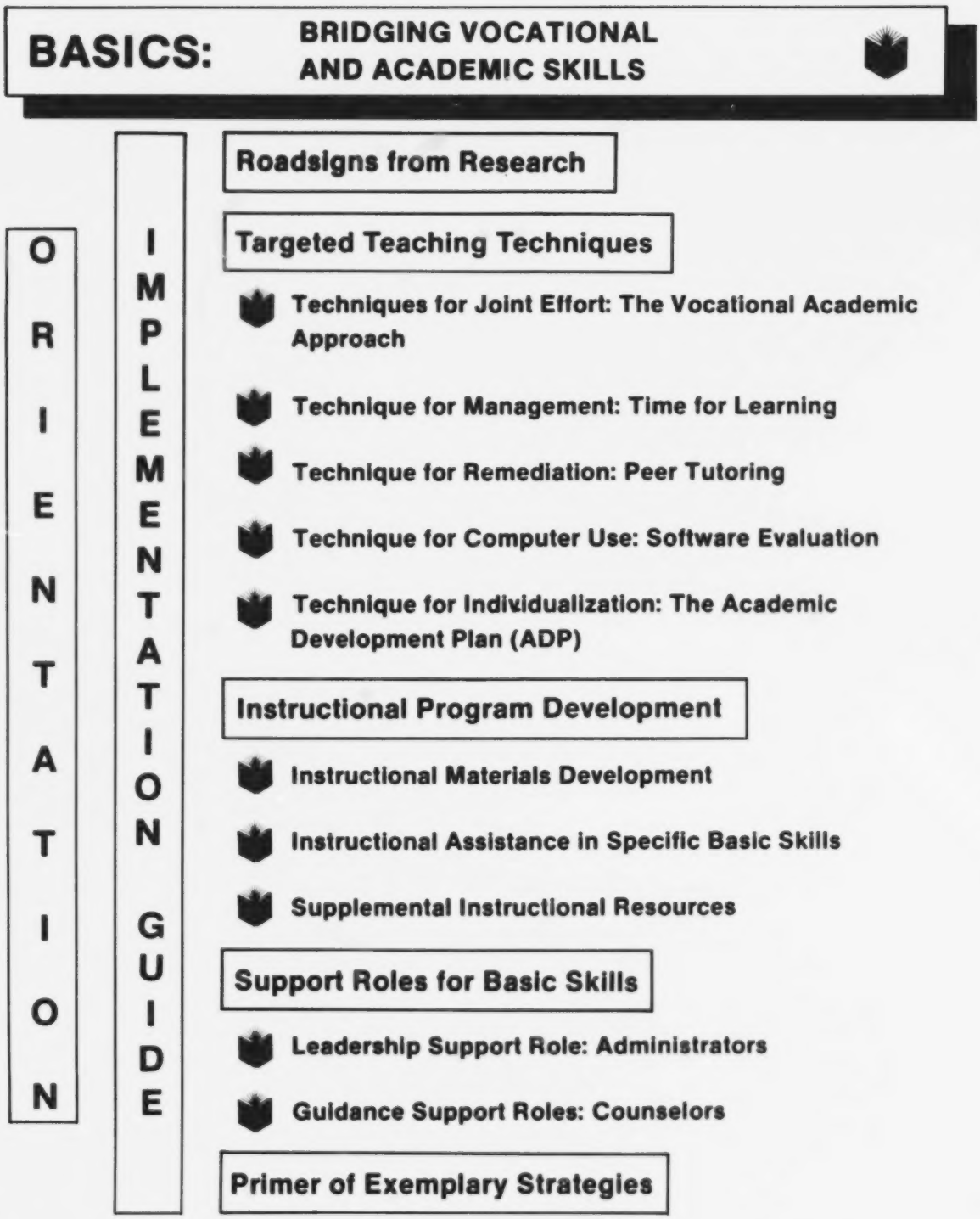
BASICS:
BRIDGING VOCATIONAL AND ACADEMIC SKILLS
ORIENTATION
IMPLEMENTATION GUIDE
Roadsigns from Research
Targeted Teaching Techniques
Techniques for Joint Effort: The Vocational Academic Approach
Technique for Management: Time for Learning
Technique for Remediation: Peer Tutoring
Technique for Computer Use: Software Evaluation
Technique for Individualization: The Academic Development Plan (ADP)
Instructional Program Development
Instructional Materials Development
Instructional Assistance in Specific Basic Skills
Supplemental Instructional Resources
Support Roles for Basic Skills
Leadership Support Role: Administrators
Guidance Support Roles: Counselors
Primer of Exemplary Strategies

Figure 1. Conceptual framework

Roadsigns from Research

BASICS has a research foundation. Research findings and implications have been used throughout as the basis for development of the package components. A summary of research findings, implications, and practical suggestions for teachers is provided in *Roadsigns from Research* to focus them in a usable form for discussion purposes. A series of brochures with related posters covers four major topics of significance for teachers who are concerned about students' problems with basic skills: dropouts, business/industry, special populations, and learning/teaching styles. Research drawn from work by the National Center and others suggests that these topics provide much of the understanding needed to address basic skills problems effectively.

Dropouts are discussed in the three brochures. The first provides an assessment of the dropout problem as it relates to basic skills deficiencies. Statistics are cited to shed light on groups with a high dropout rate who also tend to have problems with basic skills. The second brochure summarizes the impact of personal, family, and school factors on dropout-prone youth through statistics and an interpretation of these factors' simultaneous contribution to basic skills deficiencies. The third brochure summarizes what tends to happen to dropouts with emphasis on pregnancy, employment, crime, and health. It also discusses the economic and educational tolls on others from students' dropping out. Finally, the promise that vocational education holds for dropout prevention is discussed, and specific approaches to basic skills instruction are outlined.

The **business/industry** brochure is designed to clarify the perspective of business and industry on the importance that the American work force be competent in basic skills. Problems concerning basic skills that companies encounter are cited as well as the entry-level skills employers look for. Suggestions to assist teachers in meeting companies' basic skill needs conclude the chapter.

Special populations are the focus of a brochure that summarizes the basic skill problems that are prevalent among special populations as well as the factors that make these problems difficult to solve. Changes are recommended that can make teachers more effective in helping special population students overcome basic skill deficiencies.

The final brochure summarizes the implications of both **learning and teaching styles** for basic skills acquisition. Several suggestions are given on how teachers can use information about learning/teaching styles to reach students with basic skills problems for whom traditional methods may be inadequate. Two brief hands-on experiences for the reader are incorporated to emphasize the impact of active learning.

Targeted Teaching Techniques

General techniques that teachers can use to strengthen any basic skill are presented in a series of five targeted teaching techniques. These techniques have been chosen to illustrate the types of activities that vocational and academic teachers can begin immediately without a great deal of advance preparation. The content of each will be discussed briefly.

Techniques for Joint Effort: The Vocational-Academic Approach discusses how educators in many places are responding to the educational challenge in ways that have positive outcomes for their students and, ultimately, for themselves. Ways that teachers can work together are specified and discussed so that teachers can work out how to proceed with joint effort in their own situation. The options include sharing, teaming, and staff crossover. Sharing involves planning and preparing for instruction cooperatively as well as sharing concerns about how to deal with change and new relationships. Teaming may involve the development of a correlated course of study and instructional materials to incorporate the vocational and academic content as well as teach the content. Staff crossover entails systematic exchange of selected responsibilities.

The final section of the document consists of examples of programs in which teachers have successfully used these strategies to integrate

vocational and academic education. Many of the teachers in these programs have instituted pioneering joint efforts from which other teachers can benefit.

Technique for Management: Time for Learning provides guidelines for making better use of time in vocational-technical classes. Interest in time use has increased sharply in recent years. Research shows that time is a critical factor; increasing time on task increases students' achievement. Furthermore, time use is one of the few variables related to student achievement that teachers can control in the classroom. Therefore, by learning to make better use of time, teachers can improve vo-tech education. Teachers can "teach smarter" by changing the ways they manage student time.

This handbook is designed to guide teachers, administrators, supervisors, inservice coordinators, and teacher educators in following step-by-step procedures for conducting time-use analyses with the aid of a convenient form. It suggests ways for vocational and academic teachers to employ time-use analyses together to improve the productivity of their classes. The three stages of time-use analyses are as follows:

1. *Discover* how students use time through observation in the classroom.

2. *Decide* if it is necessary to increase time on task.

3. *Change* day-to-day practice in the classroom if increased time on task is desired.

Technique for Remediation: Peer Tutoring focuses on a specialized teaching strategy that has been proven effective in a variety of vocational and academic settings to meet the increasingly diversified needs of vocational students. Because of its adaptability to individual learning needs, peer tutoring can be incorporated easily into the vocational classroom. It can be implemented without the high costs usually associated with hiring and training additional staff. Peer tutoring typically results in a number of benefits to students, staff, and administration. Current data suggest it is effective in aiding special needs learners to achieve educational objectives.

This guide describes how to apply peer tutoring as a strategy for remediation of basic skills through the phases of program planning, program development, and program evaluation. Program planning is concerned with the tasks relevant to preparation of a program plan or proposal. Program development addresses the tasks involved in initiating the operation of each component. Program evaluation incorporates several types of evaluative techniques that are effective in assessing peer tutoring programs. Commonly needed forms and helpful tips for tutors are included.

Technique for Computer Use: Software Evaluation contains a compilation of suggestions and guidelines to assist secondary level teachers in planning to make the most effective use of computer-assisted instruction (CAI) through careful courseware evaluation. Vocational and academic teachers working together to develop and implement guidelines for courseware evaluation are in a particularly good position to provide for students' vocational *and* academic needs.

The guide is structured around a checklist that deals with three major tasks: plan for effective use of the computer, establish guidelines for developing or evaluating software, and evaluate courseware. These tasks highlight the importance of evaluating courseware only on the basis of carefully constructed plans for CAI use and established evaluation guidelines.

The following three steps are discussed for teachers to plan for effective use of the computer: identify the benefits of CAI, identify appropriate tasks for CAI, and identify strategies for CAI. Establishing guidelines involves the following steps: identify the learning objectives and tasks, determine teaching effectiveness, evaluate appropriate use of computer capabilities, identify management possibilities, and evaluate documentation.

The task of actually evaluating courseware begins with identifying potentially suitable courseware. Then, to facilitate the evaluation, a form and guide for courseware evaluation are presented.

Technique for Individualization: The Academic Development Plan discusses an individu-

alized plan for a student's academic progress worked out cooperatively by the student and several of those involved with helping the student learn. The major thrust of the ADP concept is to respond to the obvious need to help students strengthen their basic skills and academic achievement. The response strategy is systematic individualized planning through the joint efforts of vocational and academic teachers who, along with others, can form a team to assess the individual student's skill levels and combined needs.

The planning efforts can be made concrete by the completion of the ADP form, which is a vehicle for sharing information, monitoring, and updating. The ADP process is discussed in this document task by task, with related parts of the form specified for each task.

The first task for the ADP team is to prepare to develop ADPs. They need to consider how to best gather information about the factors influencing a student's academic development, including academic skill levels, learning style, sex equity, and special considerations for handicapped youth, minority and immigrant youth, gifted and talented youth, and migrant youth.

The actual ADP development begins with gathering data and recording preliminary information on the form. This paves the way for sharing the information with the team to use as a basis for planning.

The next task is to analyze the student's needs and design a plan to address them. A facilitator initiates this task by arranging for an ADP planning meeting. At this meeting, through joint and systematic review and discussion, an action plan is formulated. The action plan includes annual goals, short-term objectives, evaluation procedures and criteria, recommended activities, and plans for monitoring.

Once the plan and the pattern of responsibilities have been worked out, the plan is put into action. The individual student knows what to do and is supported by others on the team who are aware of the student's goals and who have support roles to play. The student's progress is monitored to see that the plan is being implemented effectively.

The final task is to review and revise the ADP at least annually. Goals and objectives that have been attained can be used as a foundation for planning continued progress and academic growth.

Instructional Program Development

Although teachers can apply a variety of techniques to help students learn basic academic skills, the foundation that must support these efforts over the long run is the development of an instructional program that applies the academic skills in the context of an occupational area. The instructional program must incorporate both student and teacher materials along with methods of instruction that will be effective. The tools for putting together such a program are provided under three headings: *Instructional Materials Development*, *Instructional Assistance in Specific Basic Skills*, and *Supplemental Instructional Resources*.

Instructional Materials Development responds to the fact that the instructional materials used by students and teachers are a primary factor in the learning equation. Thus, the need to search out or develop instructional materials is ever present. The process of review and development can be complex and cumbersome without the kind of systematic, efficient system discussed in this guide.

The guide begins with a prerequisite series of steps designed to lay a firm foundation for development of materials in any of a variety of modes and includes the following:

- Conduct needs assessment
- Determine job
- Conduct job analysis
- Identify tasks for instruction
- Conduct task analysis
- Cross-correlate occupational tasks with academic skills needed

- Determine type of instructional system
- Determine need to develop, adapt, update, or supplement materials
- Specify the development task

Three types of curriculum material are presented as options for development from the preparatory work: competency-based individualized instruction, applied learning in a problem-solving mode, and lesson plans for traditional instruction. The characteristics of that type of material, the rationale for use, and guidelines for development are provided. A sample of each type of curriculum is included as an illustration of the principles discussed.

Management of the curriculum development process involves monitoring progress and controlling for quality. Monitoring is discussed with reference to controlled routing and coordination of effort. The resulting materials should be reviewed for quality both internally to determine how closely they correspond to the agreed-upon guidelines for development and externally to evaluate how well they meet the intended objectives in terms of student learning.

Instructional Assistance in Specific Basic Skills is provided in a series of five professional teacher education modules. These modules are designed to give practical assistance to vocational and academic teachers for developing instruction to meet vocational students' needs in basic and technical reading, writing, oral communication, and math.

Vocational and academic teachers need to reinforce the message that reading is an essential skill for any job that students will hold. As teachers prepare to help their students with basic reading, they need to—

- create an appropriate environment and
- assess students' reading needs.

Planning to assist students in developing technical reading skills involves the following:

- Selecting written materials for instruction that are appropriate for the occupational area and for the student's needs and abilities
- Developing specific activities to integrate the teaching of technical reading with occupational skills training

Most people are asked almost daily to do some type of writing; writing skills are very important for employability. Both vocational and academic teachers can help students by reinforcing this message to motivate them to work on their writing skills. Vocational teachers can inform students about the kinds of writing that will be expected on the jobs they are likely to hold. As teachers prepare to help their students improve their writing skills, they need to—

- identify occupational requirements and
- identify students' writing needs.

Oral communication is central to human interaction. In fact, most people spend the majority of their communication time speaking and listening, rather than reading and writing. Vocational and academic teachers need to remind students that their success on any job will depend on oral communication with supervisors, peers, and customers. In this process, teachers must—

- understand the full range of oral communication skills,
- assess their own skills and students' present skills,
- create an appropriate environment, and
- use appropriate instructional techniques.

Assisting students in improving their math skills is a process involving preparation (during which teachers can make the necessary assessments) and actual work with the students. Preparation to assist students depends on important contributions of information from both vocational and academic teachers. They will need to assess the following:

- Students' present levels of skills in math

- Math skills students will need in the vocational program and ultimately on the job
- Their own readiness to teach the skills
- The adequacy of the instructional materials

Working with students after making preparations involves several general strategies that are helpful:

- Create a positive atmosphere.
- Individualize instruction.
- Teach math in the context of occupational skill development.
- Use visual and tactile means to reinforce math concepts.

Teachers can share information about appropriate techniques for improving specific math skills, such as ways to pinpoint difficulties, explain mathematical concepts, work on common problem areas, and provide various types of math practice activities. The modules from the Professional Teacher Education Module Series give specific information on each of the topics discussed above.

Supplemental Instructional Resources responds to the teacher's need for additional student materials to use in integrating basic skills into vocational education. It identifies sources of basic skills instructional print materials available for use with secondary-level vocational students.

Teachers may choose to supplement existing student materials with other materials that may be more focused on students' specific basic academic needs. It is understood that selecting course materials for students is a decision of the local school district and its needs. Further, the choice of materials is based on selection of content needed by students. Thus, resources listed in this guide are intended to give the teacher a starting point. They should be used in the context of the local situation and assessment of student needs to help students achieve basic skills knowledge.

The guide has four major chapters. "Identifying Resources" describes the national, state, and regional information systems and networks that are available to assist teachers in identifying and locating instructional materials and resources. "Analyzing Resources" explains how instructional materials can be analyzed to draw out basic skills content and provides an example of such an analysis.

"Resources" lists 182 student resources appropriate for supplementing basic skills instruction and learning. Each resource provides the *title* of the resource, *author(s)*, if any, and *publisher*. The chapter has four sections. The first lists *mathematics resources*, grouped by *general mathematics* and *occupationally related mathematics*. The second lists resources for supplementing reading, writing, speaking and listening skills in the *communications resources section*. In the *other basic skills resources section*, resources focus on areas other than math and communication, such as science. The *adult basic education resources* section lists resources developed for adult basic education learners, therefore, possibly more appealing to older secondary students working to strengthen basic skills. The resources are grouped by *mathematics* and *communication* areas.

The last chapter contains an alphabetical list of publishers and their addresses.

Support Roles for Basic Skills

The purpose of the support roles component is to assist persons who have nonteaching roles—but who share concern about students—in defining their support role and to provide them with successful techniques to facilitate the joint effort of vocational and academic teachers to strengthen students' basic skills. The support roles covered are for leadership (administrators) and guidance (counselors), although these roles include enlisting the support of others such as employers and parents.

Two administrator's guides are provided for the leadership support role. The first, ***Improving the Basic Skills of Vocational-Technical***

Students, offers information and guidelines to help vocational administrators initiate program changes to strengthen basic skills. Because administrators are so important in making change happen, the guide speaks to administrators at various levels—department head, vocational principal, dean of vocational education, and state department supervisor, to name a few.

In addition to providing a background on the nature of basic skills in a vocational education context, the guide discusses types of basic skills programs, staffing structures, and effective instructional approaches. Other topics covered include program planning, implementation guidelines, and evaluation criteria. The guide gives recommendations for effective instructional leadership that have particular significance for a joint effort between vocational and academic teachers to strengthen basic skills.

The second administrator's guide, ***Integration of Academic and Vocational-Technical Education***, provides vocational administrators with examples of joint efforts that are underway between academic and vocational teachers to strengthen the basic skills of vocational students. Although not all the programs are fully realized, these models-in-process at various implementation stages provide a concrete backdrop for understanding the strategies and procedures for managing the change process that are discussed earlier in the guide.

Although written for vocational administrators, this guide offers all educational personnel a useful philosophical foundation from which to consider the merits of collaboration between vocational and academic teachers. The recent scrutiny of American schools has revealed strengths and weaknesses in both kinds of curriculum and instruction. Pooling vocational and academic colleagues' respective strengths can greatly enhance the quality of education for all students, especially vocational students for whom the lack of basic skills threatens employability and chances for fulfillment. Major strategies are advocated in the guide for successful joint efforts to strengthen basic skills.

Provide for the Basic Skills is a module designed to help prepare *counselors* to perform essential tasks and fill the roles that commonly support a basic skills program. Addressed to professional and paraprofessional guidance program staff in a wide variety of educational and community settings, the module reflects the view that counselors have a critical role to play in strengthening basic skills—even though they are not so directly engaged in the effort as academic and vocational teachers.

The module's advocacy of "learning assistance counselors" fits the concept of joint efforts between vocational and academic teachers. This counseling concept emphasizes, for example, communication and a team approach, which are at the heart of a successful joint effort. Learning experiences in the module clearly define counselor roles and responsibilities related to basic skills by integrating theory and application.

Primer of Exemplary Strategies

The purpose of this element is to provide a resource tool for teachers that illustrates—through its examples of models and practices proven successful at state and local levels—how to implement the process and techniques in the **BASICS** package. The strategies presented aim at strengthening academic basic skills by connecting these skills to vocational service areas and by enabling vocational and academic teachers to work together.

The types of strategies range from techniques used by classroom teachers to joint efforts made by academic and vocational teachers to develop materials that reinforce, remediate, and enhance basic skills learning. The primer is divided into two topics: basic skills techniques and joint effort practices.

The *basic skills techniques* include summaries of techniques, practices, and programs. They are grouped by the type of basic skill or combinations of skills. The groups are math skills, math and problem-solving skills, communications skills, communications and problem-solving skills, math/communications, math/communications and problem-solving skills, science skills, and other combinations of basic skills. All of the skills related to language

arts—reading, writing, listening, and speaking—are listed under the heading Communications.

The *joint effort practices* are grouped as follows: math skills, math/communication skills, math/communication and problem-solving skills, math and science skills, and other combinations of skills.

In summary, this section has described the conceptual structure of the package elements. The previous section gave information about the physical structure of **BASICS.** It remains to the next section to provide assistance in planning workshops for **BASICS** implementation.

Implementation through Workshops

An important aspect of effective use of **BASICS** is the involvement of the teachers and other school personnel for whom the resources are intended. If these people can be involved in planning how they can contribute to the program outcomes, they are likely to develop a personal investment that will promote program success. A development of commitment to the philosophy of the joint vocational-academic approach is critical for making it work in spite of the fears and barriers that may exist.

A series of workshop outlines follows, along with a crosswalk chart giving guidance on which workshops are best suited to meet specific needs. The person(s) responsible for coordinating the **BASICS** implementation can select the workshops needed to involve school staff in the school's use of **BASICS.** Each outline is designed to result in a two-hour workshop when local material is incorporated to make the content school-specific. The workshop outlines indicate graphic figures that can be duplicated for handouts from selected **BASICS** products.

WORKSHOP OUTLINE #1

ORIENTATION

Purpose: To create an awareness on the part of school staff of the **BASICS** package

Objectives: Participants should be able to—

- describe the need that resulted in development of the **BASICS** package,
- state the premise of the joint vocational-academic approach that forms the foundation of the **BASICS** package, and
- recount the "story" of one of the teachers shown in the video vignettes.

Who Should Attend: All professional school staff, district office professional staff, school board members

Resources: *Introducing BASICS*, videotape

Coordinator should—

- have read the *Bridger's Guide*, and
- have made copies of figure 1 in the *Implementation Guide* to use as a handout.

Content: Explanation of the school's (district's) reasons for using **BASICS**

Showing of the videotape

Explanation of how the school expects to use **BASICS**

Activity: Discussion of the videotape

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #2

TECHNIQUES FOR JOINT EFFORT: THE VOCATIONAL-ACADEMIC APPROACH

Purpose: To enable teachers to identify and relate to their roles in a joint vocational-academic approach to strengthen students' basic skills

Objectives: Participants should be able to—

- state the basic skills problem from the context of their own school and program situation,
- identify at least two reasons why joint effort might be an effective approach to work on the problem,
- identify three specific patterns for working together,
- describe at least one strategy for potential effective use of joint effort in their program situation, and
- name a barrier to effective use of joint effort, along with a suggestion for eliminating the barrier.

Who Should Attend: Vocational and academic teachers

Resources: *Techniques for Joint Effort: The Vocational-Academic Approach*

Any or all of the six **BASICS** brochures might be distributed for reading in advance of the workshop.

Content: What Is the Problem?

- Evidence of basic skills deficiencies and the call to excellence
- The nature of technological change and demands of employers
- The negative repercussions of some "reform" changes on vocational education

Can We Respond?

- The opportunity we have and what's at stake
- The resources we have
- Who better to respond?

How Best to Respond?

- There is evidence that when basic skills are linked with and applied to technical skills, students are willing and able to master them.

- Academic skills are embedded in vocational skills.
- Vocational tasks provide for realistic use of academic basic skills.
- Neither academic nor vocational skills should be taught in isolation from each other. Teachers need to make students aware of the bonding between academic skills and vocational tasks.
- All the above points to the fact that—

  strengthening students' basic skills is best achieved by a *joint effort* between vocational and academic teachers to design a program that applies academic skills in the context of an occupational area.

Options for Cooperation

Sharing—

- in the planning.

  Who will teach the academic skills?
  Who will teach the vocational skills?
  What effect will the organizational structure have on your ability to integrate subjects?
  Can the structure be modified or changed?
  What curricular materials will be required, and how will they be secured or developed?
  Who else needs to be involved in the effort?

- in the preparation, and
- in the concerns.

Teaming—

- to develop a correlated course of study,
- to develop instructional materials incorporating the vocational and academic content, and
- to teach the content.

Staff Crossover—

- (in a number of ways)

Examples of Joint Effort

Activity: Divide the participants into small discussion groups to—

- read selections from the "Joint Effort in Action" section of the guide and discuss the advantages and disadvantages of applying the same or similar strategies to their own program.

- outline a model for their own school's joint effort, and
- discuss any potential barriers to implementing their model and suggestions for eliminating the barriers.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #3

TIME FOR LEARNING

Purpose: To enable teachers to conduct time analysis

Objectives: Participants should be able to—

- relate the value of time-use analysis for strengthening basic skills in vocational education,
- identify at least two benefits of a joint vocational-academic effort in classroom time-use analysis, and
- analyze classroom time used for basic skills learning.

Who Should Attend: Vocational and academic teachers

Resources: *Techniques for Management: Time for Learning*

The coordinator may want to duplicate the Basic Skills Observation Form from the Prologue of the above product for use as a handout.

[Also available from the National Center for Research in Vocational Education, *Managing Learning Time: A Professional Development Guide* Leadership Training Series No. 69 (Halasz, Ida M. and Raftery, Susan R., The National Center for Research in Vocational Education; Columbus, Ohio; 1985), which contains a detailed workshop plan with visual aids]

Content: More Time for Basic Skills

- Demand for excellence in education through increased time available for learning basic skills
- Better classroom management of time
- Fewer adminstrative burdens on the teachers and fewer related intrusions into the school day

Time-Use Analysis

- Cooperation between vocational and academic teachers
- Cross-observing classrooms
- Sharing results and ideas for improvement of time use

Benefits of Joint Vocational-Academic Effort

- Increased integration and coordination to maximize quality of time
- Insight into application of basic skills concepts to specific vocational areas

- More effective learning resulting in less time spent on review and remediation

Activity: Observe a simulated classroom teaching situation. Based on the observation, do the following:

- Record time on task for basic skills, using the Basic Skills Observation Form.
- Analyze the results of the observation.
- Suggest ways in which time could have been saved and used for basic skills learning.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #4

PEER TUTORING

Purpose: To enable teachers to set up a peer tutoring program to strengthen basic skills

Objectives: Participants should be able to—

- state the basic skills problem from the context of their own school and of the program situation for which peer tutoring could be effective.
- identify at least two reasons why peer tutoring might be an effective strategy for remediation of basic skills.
- identify at least one reason for using a joint effort approach in planning peer tutoring activities.
- describe the role of the teacher in the peer tutoring process.
- plan a peer tutoring program to meet a basic skills need. and
- list characteristics to look for in selecting tutors.

Who Should Attend: Vocational and academic teachers

Resources: *Techniques for Remediation: Peer Tutoring*
Brochures—*Roadsigns from Research 1: Dropouts*
Perils and Profiles
Whys and Wherefores
Hard Times and Handiwork
The three brochures might be distributed for reading in advance of the workshop. The coordinator may want to duplicate the checklists that begin each chapter of the technique guide for use as handouts.

Content: Why Peer Tutoring?

- Easily implemented
- Cost-effective
- Increased individualized attention
- Academic improvement for tutee
- Increased social integration for tutee
- Increased self-confidence for tutee
- Increased self-confidence and teaching skills for tutor
- Improved ethnic relationships in bilingual/bicultural classrooms

A Joint Vocational-Academic Approach

- Increased integration and coordination of vocational and academic concepts
- Maximum quality tutoring time
- Increased opportunity for identification of students needing remediation

Designing and Implementing a Peer Tutoring Program

- Plan the Program

  Recognize the need
  Establish a planning group
  Assess student needs
  Develop program goals and objectives
  Determine facilities, materials, and equipment needs
  Determine personnel requirements
  Draft a plan and circulate it for review
  Present the program plans to administration

- Develop the Program

  Provide program orientation
  Provide faculty inservice training for the teacher's role within a classroom tutoring model or within a tutoring center program model
  Recruit and select tutors
  Train tutors
  Develop the tutee intake process
  Match and assign students
  Perform regular tasks

- Evaluate the Program

  Select types of evaluation
  Identify the information needed
  Locate or develop evaluation instruments
  Collect and analyze data
  Report program results
  Modify the program

Activity: Divide the participants into small discussion groups to—

- discuss the teacher's role in designing and implementing a peer tutoring program;
- plan a peer tutoring program to meet a recognized basic skills need, using the Plan the Program Checklist;
- discuss characteristics to look for in selecting tutors and methods of training them.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #5

SOFTWARE EVALUATION

Purpose: To enable teachers to assess software for basic skills learning

Objectives: Participants should be able to—

- identify at least five reasons for using computer-assisted instruction to strengthen basic skills,
- identify at least two reasons for using a joint vocational-academic approach to evaluating software, and
- evaluate software for use in strengthening basic skills

Who Should Attend: Vocational and academic teachers
Librarians
Computer Resource Coordinator

Resources: *Techniques for Computer Use: Software Evaluation*

The coordinator may want to duplicate the Courseware Evaluation Form from the above product for use as a handout.

Content: Functions of Computer-Assisted Instruction

- Deliver concepts to a student;
- Diagnose a student's learning patterns and problems and prescribe remediation; and
- Give learners a sense of control, involvement, immediate feedback, and automatic interaction that enhances learning.

Benefits of a Joint Vocational-Academic Approach

- Academic teachers have a large supply of basic skills software from which to choose.
- Vocational teachers have a smaller supply of commercial software because of a smaller market and thus less profitability for producers. Also, commercial software does not reflect requirements of local employers.
- A joint effort can result in guidelines for developing or evaluating computer software.
- Learning gains can result from the cross-fertilization that occurs through a joint software evaluation.

Benefits of Computer-Assisted Instruction

- As a machine, the computer is—
  - patient,
  - nonjudgmental,
  - private,
  - interactive, and
  - responsive.
- Moreover, the computer offers—
  - individualized learning,
  - learning paths,
  - looping,
  - motivation for passive or negative learners,
  - animation of processes,
  - computer literacy required for many entry-level jobs,
  - remedial instruction of which student may not be aware,
  - enrichment,
  - a way to track progress, as well as
  - a massive information base.

Appropriate Tasks for Computer-Assisted Instruction

- Use of the computer as a teaching tool is determined by instructional goals.
- Computers are an effective tool for tasks that can be explicitly defined and that require drill, routine computations, display or a large amount of material, feedback, or adjustment for individual pace.

Strategies for Computer-Assisted Instruction

- Drill and practice
- Tutorial
- Simulations

- Problem solving
- Inquiry
- Demonstration
- Writing

Establishing Guidelines for Developing or Evaluating Computer Software

- Identify the learning objectives and tasks. Ask the following questions:

  —Is the computer appropriate for the accomplishment of this objective?

  —What category of computer software (e.g., drill, tutorial, simulation) can provide the best vehicle for reaching this objective?

  —In what way will computer-assisted instruction be more effective than established techniques for achieving this goal?

  —What elements of the particular discipline or subject matter have traditionally posed teaching problems, and why?

- Determine Teaching Effectiveness

  —Information content

  —Response handling

  —Goals

  —Time use and timing

  —Language and instruction

  —Testing software for effectiveness

  —Reflecting societal issues

- Evaluate Appropriate Use of Computer Capabilities

  —Graphics

  —Sound and Speech

  —Interaction

  —Randomization

- Identify Management Possibilities

- Evaluate documentation
  - —Clear marking on package
  - —Copyright and licensing
  - —Equipment list
  - —Step-by-step directions
  - —Explanations of lesson content
  - —Simple instructions for editing
  - —Supplementary material

Activity: Divide the participants into pairs of vocational and academic teachers to do the following:

- Discuss the advantages of using computer-assisted instruction to strengthen basic skills.
- Review guidelines for evaluating computer-courseware.
- Evaluate basic skills computer courseware, using the Microcomputer Courseware Evaluation Form and Guide.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #6

ACADEMIC DEVELOPMENT PLAN (ADP)

Purpose: To enable a support team to plan a student's academic development

Objectives: Participants should be able to—

- identify at least two reasons why an academic development plan might be an effective approach to strengthening basic skills,
- list the tasks involved in developing an academic development plan,
- identify at least three strategies that could be included in ADPs for special population students,
- identify at least three principles to follow in ensuring sex equity, and
- identify at least three strategies for working with a variety of learning styles.

Who Should Attend: Vocational and academic teachers
Guidance counselors
Special education teachers

Resources: *Techniques for Individualization: The Academic Development Plan*
Brochures—
Roadsigns from Research 3: Special Populations
Roadsigns from Research 4: Learning/Teaching Styles
The brochures might be distributed for reading in advance of the workshop. The coordinator may want to duplicate the ADP form in appendix A of the technique guide for use as a handout.

Content: What is an ADP?

- An individualized plan for a student's academic progress worked out cooperatively by the student and others involved with helping the student learn
- A plan aimed at helping students strengthen basic skills

Why an ADP?

- To help students function effectively in a complex society
- To serve as a recorded, motivational contract with the student
- To provide a student with a sense of progress
- To encourage the student to assume responsibility for learning

Following the ADP Process

This involves students, academic and vocational teachers, school counselor, parents, and sometimes employers and friends in planning through a series of six tasks.

ADP Task 1: Prepare to develop ADPs.

- Assess academic skill levels.

  Diagnostic tests
  Occupational area competency profiles

- Determine cognitive style and learning style.
- Ensure sex equity.
- Take account of special considerations

ADP Task 2: Prepare to develop ADPs.

- Gather the data.
- Record preliminary information on the ADP form.

  Personal data, school subject information, and work history
  Needs assessment
  Special considerations

ADP Task 3: Analyze students' needs and design a plan to address them.

- Arrange for an ADP planning meeting.
- Formulate the action plan.

  Set annual goals
  Develop short-term objectives
  Develop evaluation procedures and criteria

- Recommend activities and identify responsibilities.

ADP Task 4: Put the plan into action.

ADP Task 5: Monitor student progress.

ADP Task 6: Revise the ADP.

Activity: Divide the group into small groups to do the following:

- Discuss advantages of an ADP
- Discuss strategies for working with special populations, working with a variety of learning styles, and ensuring sex equity.
- Outline the steps involved in completing an ADP for a student.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #7

INSTRUCTIONAL MATERIALS DEVELOPMENT

Purpose: To enable teachers to develop curriculum to support applied learning

Objectives: Participants should be able to—

- relate the value of developing instructional materials for use in strengthening basic skills,
- describe the DACUM process of job analysis,
- select job tasks that are best taught in the classroom,
- analyze tasks selected for instruction,
- identify at least three characteristics of a competency-based vocational education program,
- develop a lesson plan for a job task, incorporating basic skills, and
- write a student activity in a problem-solving mode.

Who Should Attend: Vocational and academic teachers
Curriculum specialists/coordinators

Resources: *Instructional Materials Development*
Brochure—*Roadsigns from Research 2: Business and Industry*
The brochure might be distributed for reading in advance of the workshop.
The coordinator may want to duplicate figure 1 from *Instructional Materials Development* for use as a handout.

Content: A Systematic Approach to Instructional Materials Development

- Materials are important to learning
- An efficient system of review and development enhances selection of an optimum set of materials

Prerequisites to Development

- Conduct a needs assessment
- Determine job parameters
- Conduct job analysis
- Consider the **DACUM** approach to job analyses
- Identify tasks for instruction

- Conduct task analysis
- Cross-correlate occupational tasks and academic skills
- Determine type of instructional system
- Determine the need to develop, adapt, update, or supplement materials
- Determine whether materials meet sex equity criteria
- Specify the development task

Develop Competency-Based Instructional Materials

- Why competency-based?
  - —Responds to the need for preparing students with entry-level job skills
  - —Is a flexible, systematic approach to address changing skill requirements and a variety of learner styles
- Characteristics of competency-based education
- Identification of criterion-referenced measures
- Guidelines for module development

Develop Materials for Applied Learning in a Problem-Solving Mode

Basic skills are required increasingly for solving daily problems on jobs as the nature of work changes in the United States

- Characteristics of materials for applied learning in a problem-solving mode
- Guidelines for development

Develop Lesson Plans

- Why develop lesson plans?
  - —Plans are a summary and coordination device for the teacher.
  - —Plans allow for anticipation of problems and keep the teacher directed toward the goal.
- Content determines format of lesson plans

Management of the Development Process

- Monitor progress
- Control quality

Activity:

- Discuss:

  —the value of developing instructional materials for use in strengthening basic skills
  —prerequisites to development
  —characteristics of competency-based instruction

Divide the participants into small groups (include vocational and academic teachers in each group). One half of the groups will—

- select a job task best taught in the classroom,
- conduct a task analysis of the task selected, and
- develop a competency-based lesson plan, incorporating basic skills to teach the task, using the lesson plan forms from the section, "Develop Lesson Plans."

The rest of the groups will write a student activity in a problem-solving mode, using the guidelines in appendix C.

In a large group summary, each group will share briefly results of the group's activity and steps followed.

Next Steps:

Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #8

INSTRUCTIONAL ASSISTANCE IN SPECIFIC BASIC SKILLS

Purpose: To enable vocational teachers to integrate academic instruction into the vocational program

Objectives: Participants should be able to—

- develop materials that could be used in their vocational program to improve students' basic reading skills,
- develop vocabulary, comprehension, and graphics reading exercises based on vocational instructional materials,
- correct and critique a letter of application written by a vocational student,
- develop a plan for using a simulated classroom or laboratory situation to assist students in improving their oral communication skills,
- plan appropriate techniques to help students described in given case situations to improve specific math skills.

Who Should Attend: Vocational teachers
(Academic teachers, possibly, as resource persons)

Resources: The following Performance-Based Teacher Education Modules:

- *Assist Students in Achieving Basic Reading Skills*
- *Assist Students in Developing Technical Reading Skills*
- *Assist Students in Improving Their Writing Skills*
- *Assist Students in Improving Their Oral Communication Skills*
- *Assist Students in Improving Their Math Skills*

Content: Basic Reading

- Create an appropriate environment.
- Assess students' reading needs.

Technical Reading

- Select written materials for instruction that are appropriate for the occupational area and for the students' needs and abilities.

- Develop specific activities to integrate the teaching of technical reading with occupational skills training, such as—

  —vocabulary exercises,
  —comprehension exercises, and
  —graphics exercises.

- Analyze instructional materials.

Writing

- Identify the basic writing skills, such as—

  —write legibly,
  —spell correctly,
  —capitalize,
  —identify appropriate form and style,
  —choose appropriate words,
  —use correct grammar,
  —punctuate properly, and
  —review written work.

- Identify students' writing needs.

  —Identify occupational requirements.
  —Assess students' writing skills.

- Use techniques to improve writing.

Oral Communication

- Understand the full range of oral communication skills

  —Speaking
  —Influence of nonverbal behavior

- Assess your own skills.

- Assess students' skills.

- Create an appropriate environment.

  —Be sensitive.
  —Motivate students.
  —Accommodate individual differences.

- Use appropriate instructional techniques.

  —Increase students' awareness.
  —Provide instruction.
  —Increase students' sensitivity.

Math

- Prepare to assist students by assessing—

  —students' present levels of skills in math,
  —the math skills students will need in the vocational program and ultimately on the job,
  —teachers' readiness to teach the skills, and
  —the adequacy of the instructional materials.

- Work with students.

  —Create a positive atmosphere.
  —Individualize instruction.
  —Teach math in the context of occupational skill development.
  —Use visual and tactile means to reinforce math concepts.

- Improve specific math skills.

  —Pinpoint difficulties.
  —Explain mathematical concepts.
  —Work on common problem areas.
  —Provide various types of math practice activities.

Activity: Each of the five modules contains activities that could be used in a workshop setting. The following activities relate to the workshop objectives:

M-1 p. 39
M-2 pp. 34, 50, 65
M-3 pp. 28-30
M-4 pp. 43-45
M-5 pp. 47-52

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #9

SUPPORT ROLES: GUIDANCE COUNSELOR

Purpose: To enable counselors to carry out their guidance roles in the joint vocational-academic approach

Objectives: Participants should be able to—

- relate the roles a guidance counselor can play in strengthening basic skills in vocational education,
- identify the major guiding principles in order to establish a program for testing and assessing the basic skill needs of students and clients,
- identify specific testing instruments for use in determining the basic skills of students and clients,
- describe the major sources for acquiring learning materials for use by students and clients in the basic skills areas,
- outline a plan for facilitating the basic skill learning strategies of students and clients, and
- designate specific approaches to use in monitoring the basic skills learning strategies of students and clients.

Who Should Attend: Guidance counselors

Resources: *Provide for the Basic Skills—Support Roles: Counselor*
Brochure—*Roadsigns from Research 2: Business/Industry*
The brochure might be distributed for reading in advance of the workshop.

Content: Guidance Counselors as Learning Assistance Counselors

Counselors can play a critical role in strengthening basic skills through their roles as—

- planners,
- evaluators,
- facilitators, and
- monitors

—of basic skills in a team approach, which is at the heart of a successful joint effort.

As *planners*, counselors can—

- provide knowledge of resources and services,
- facilitate planning efforts between vocational and academic teachers, and
- help recruit students to the basic skills program and reinforce commitment over time.

As *evaluators*, counselors can—

- assess students' basic skills or advise teachers on assessing basic skills,
- locate sources for assessment, and
- suggest realistic and practical procedures.

As *facilitators*, counselors can—

- use communication and interpersonal skills to mediate between vocational and academic teachers,
- outline a plan for facilitating the basic skills learning strategies of students, and
- identify sources for acquiring basic skills learning materials for use by students.

As *monitors*, counselors can—

- designate specific approaches to use in monitoring basic skills learning strategies of students,
- provide teachers with attendance information and employer-based basic skill requirements, and
- provide feedback from students and parents.

Activity:

Discuss the roles of the guidance counselor in strengthening basic skills in vocational education.

Divide the group into smaller groups and assign each one of the following:

- Complete Learning Experience 1, *Developing Guiding Principles*, Group Activity, p. 47
- Complete Learning Experience 2, *Identifying Testing Instruments*, Group Activity, p. 51
- Complete Learning Experience 3, *Acquiring Learning Materials*, Group Activity, p. 57

- Complete Learning Experience 4, *Facilitating Learning Strategies*, Group Activity, p. 61

- Complete Learning Experience 5, *Monitoring Learning Strategies*, Group Activity, p. 65

Each group will share results of the activity completed with the total group.

If the total group is small, the workshop leader may choose to have the group complete Learning Activity 1 and one or more of the others, depending on time.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

WORKSHOP OUTLINE #10

THE LEADERSHIP ROLE: ADMINISTRATORS

Purpose: To enable administrators to carry out their leadership role in the joint vocational-academic approach

Objectives: Participants should be able to—

- state the **BASICS** definition of basic skills from the vocational education viewpoint,
- discuss the causes of the basic skills problem and strategies being used to solve it in vocational education,
- determine which staffing structure for their own school would contribute most to strengthening students' basic skills,
- discuss the three major administrator functions for a program to strengthen basic skills,
- structure a process for change that demonstrates an awareness of staff sensitivities, and
- design a model for their own school to strengthen students' basic skills through the joint vocational-academic approach.

Who Should Attend: Administrators from the local school (and from the district and state levels to the extent they are able to be involved)

Resources: *Improving the Basic Skills of Vocational-Technical Students: An Administrator's Guide*
Integration of Academic and Vocational-Technical Education: An Administrator's Guide
The six **BASICS** brochures

Content: What Are the Basic Skills?

- The general academic areas
- The vocational education viewpoint of academic foundations

What Is the Basic Skills Problem?

- Evidence of basic skills deficiencies and the call to excellence
- The nature of technological change and demands of employers
- The negative repercussions of some "reform" changes on vocational education

Can We Respond?

- The opportunity we have and what's at stake
- The resources we have
- Who better to respond?

How Best to Respond?

- There is evidence that when basic skills are linked with and applied to technical skills, students are willing and able to master them.
- Academic skills are embedded in vocational skills.
- Vocational tasks provide for realistic use of academic basic skills.
- Neither academic nor vocational skills should be taught in isolation from each other. Teachers need to make students aware of the bonding between academic skills and vocational tasks.
- All the above points to the fact that—

  strengthening students' basic skills is best achieved by a *joint effort* between vocational and academic teachers to design a program that applies academic skills in the context of an occupational area.

What Staffing Structure Would Best Suit the School Situation?

- How staffing structure relates to strategy options
- Strategies being used successfully to implement a joint vocational-academic approach
- Advantages of various options
- Disadvantages of various options

What Leadership Is Necessary?

- Need for broad-based support and full commitment
- Major administrator functions

  —Plan effectively.
  —Implement the program with sound leadership.
  —Establish specific criteria for program evaluation.

- Planning and support for the change process

  —Lay a foundation for the change and the need for the change.
  —Conceptualize the nature and parameters of the change.
  —Prepare for the change.
  —Maintain an actively supportive attitude.

What Model Would Best Serve the Students in the School?

- Needs assessment
- Program elements
- Program strategies
- Staffing structure
- Development of commitment
- Plan for the change process
- Facilities, materials, and equipment
- Funding
- Community involvement
- Implementation
- Evaluation

Activity: The workshop activity can be one in a series of meetings for planning the school's joint vocational-academic approach and use of **BASICS**.

Administrators can—

- read selections from the administrator's guides (see especially Part Three Integration Models in Guide #2) and discuss the advantages and disadvantages of applying the same or similar strategies to their own programs,
- draft an outline of a model that can be used as a starting point for discussion of their own school's joint effort, and
- discuss any potential barriers to implementing their model and suggestions for eliminating the barriers.

Next Steps: Be sure to discuss with participants what will happen as a result of the workshop and who will be involved in the next steps.

Crosswalk: Identified Needs and Workshops

The chart below is designed to link identified school needs with the implementation workshops that would address those needs most directly. Any of these workshops should be prefaced by the Orientation, Workshop #1.

If the need is to—	Use Workshop—
• Help vocational students meet academic graduation requirements	#7
• Prevent dropouts	#2-9
• Combat illiteracy	#5, #6, #7
• Respond to business and industry	#7
• Improve remediation	#4, #5
• Guide and motivate students	#6, #9
• Integrate vocational and academic instruction	#2, #7
• Increase classroom time spent on academic learning	#3
• Help vocational teachers teach academic skills	#8
• Design an integration model for the school	#10

Appendix A

A Typology of Standards Noted in the Recent Commission Reports

The following material is reprinted with permission from McDill, Natriello, and Pallas (1986, pp. 124, 143-144).

The recent commission reports on the state of American public schools have called for higher standards for students in three broad areas: the academic content of courses, the use of time for school work, and student achievement (Education Commission of the States 1983; Griesemer and Butler 1983). These three quite different types of standards may present different problems for potential dropouts.

Several reports call for higher standards for course content. For example, the National Commission on Excellence in Education (1983) advocates five new basics to be taken by all high school students, although Edson (1983) points out that these are essentially those recommended by the Committee of Ten in 1983. These basics include four years of English, three years each of mathematics, science, and social studies, and one-half year of computer science. The commission's proposal would represent a more demanding curriculum for the many students who do not currently take such courses. The National Science Board Commission (1983) has advocated more courses in science and math, and the Task Force on Education for Economic Growth (1983) has called for the elimination of the soft, nonessential courses. Other reports have placed emphasis on other curriculum areas (e.g., Boyer [1983] on writing), but the general message is that students should be pursuing more demanding sequences of basic courses. Of course, there is another side to strengthening requirements in the basics. If these recommendations are implemented—and there is considerable evidence that they are being implemented in a number of states and school districts (U.S. Department of Education 1984)—students will have fewer choices in selecting courses, and the high school curriculum will have a more restricted range of course offerings.

The use of time for instruction and learning is a second area in which a number of commission reports have advocated higher standards. Longer school days and longer school years are recommended by the National Commission on Excellence in Education (1983) and the Task Force on Education for Economic Growth (1983). They are joined in this recommendation by the National Science Board Commission (1983), which, in addition to longer school days and school years, suggests the institution of a longer school week to provide more time for instruction in science and mathematics.

Several reports look beyond in-school time to the prospects for increasing out-of-school learning time. The National Commission on Excellence in Education (1983) argues that students should be assigned more homework in high school. The Task Force on Education for Economic Growth (1983) recommends firm, explicit, and demanding requirements for homework.

Still another recommendation for increasing the time that students spend in school concerns stricter attendance policies. The Task Force on Education for Economic Growth (1983) advocates firm and explicit attendance requirements. The National Commission on Excellence in Education (1983) recommends attendance policies with clear incentives and sanctions.

Critical of calls for additional time for school, several reports point out that before we add time to the school day, week, or year, in-school time should be used more effectively (Goodlad 1983). Both the National Commission on Excellence in Education (1983) and the Task Force on Education for Economic Growth (1983)—groups advocating more time in school—argue for better use of time in school. According to the Task Force on Education

for Economic Growth (1983), stricter discipline policies would be one way to promote better use of school time.

Higher standards for student achievement is a third area in which recommendations have been made. Several types of new achievement standards have been suggested. One type of recommendation calls for an end to the use of grades as motivational devices reflective of student effort and the use of grades solely as indicators of academic achievement (National Commission on Excellence in Education 1983; Task Force on Education for Economic Growth 1983). Rigorous grade promotion policies are a second type of achievement standard under which students would be promoted only when it is academically justified but not for social reasons (National Commission on Excellence in Education 1983; National Science Board Commission 1983; Task Force on Education for Economic Growth 1983). The use of standardized tests at specified intervals is a third type of achievement standard. Boyer (1983), in keeping with his emphasis on the importance of language, argues for the use of a test of language proficiency prior to high school admission, with remediation of any deficiencies during the summer. More generally, the National Commission on Excellence in Education (1983) recommends the use of achievement tests at major transition points, particularly in the move from high school to college. Moreover, it urges colleges and universities to participate in the process of raising standards for tying achievement levels for student coursework to college admissions standards. The Task Force on Education for Economic Growth (1983) recommends periodic testing to assess student achievement and skills.

Appendix B

Concerns Voiced in California

The following statement is reprinted from California Advisory Council on Vocational Education (1985, pp. 3, 11-12).

More recently, legislative efforts to increase basic skills proficiency among students placed additional strain on the vocational education system. Assembly Bill 65, which requires a student to pass proficiency examinations to earn a high school diploma, and the increased graduation requirements in Senate Bill 813, have diminished considerably the time available for students to take elective courses. Failure to pass the proficiency tests requires remedial course work in addition to the increased number of courses that must be taken to satisfy graduation requirements. And many students do fail the tests: between twenty-four and sixty-one percent of all public students fail, depending on grade level.[1]

Testifying before the California Senate Education Committee, Frank E. Delavan, Associate Superintendent of the Sacramento Unified School District, said the effects of stronger academic requirements on enrollment in elective classes

> have been more dramatic than we anticipated-especially when you realize the new requirements only apply to our current freshmen and sophomore students. One of four high schools reports that it had to drop its graphic arts classes and advanced auto shop class completely because of low enrollments. One vocal music teacher now teaches two periods of French because her music classes lost so many enrollees. Also, business education classes have declined somewhat . . . The new graduation requirements—plus the courses we require them to take so they can pass the proficiency test in the basic skills of reading, mathematics, English and writing—present almost insurmountable barriers to graduation[2].
>
> The districts' primary concern is the effect that the new graduation requirements will have on dropout rates. Most districts indicate that their dropout rates are increasing (although these statistics usually have not been monitored very closely in the past and accurate documentation is not readily available). Educators give three main reasons for this. First, Assembly Bill 65 requires students to pass proficiency tests to earn a high school diploma. Many students do not pass these examinations and have to take remedial courses. Second, summer school in most districts has been discontinued because of reduced funding, so remedial courses must be taken during the regular school year. This remediation problem and the additional academic course requirements allow students little time in their schedule for elective courses. Third, many students become discouraged with academic classes because they fail to see the relevancy of the subject; they would rather leave school than be forced to sit in classes which they feel have no meaning for them. And if students leave school before graduation, they may not be equipped with sufficient basic skills or occupational skills to find employment. Local educators worry that the social ramifications of students dropping out will be enormous.

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[1] Policy Analysis for California Education, *Conditions of Education in California 1984*, pp. 7-8

[2] "Grad Requirements May Hurt Faltering Students," *Sacramento Union*, 28 January 1985, p. C-1

Appendix C

Three Statements Supporting Joint Vocational-Academic Effort

The following statements are excerpts from *The Unfinished Agenda* (National Commission on Secondary Vocational Education 1984).

Educational reformers have long called for vocational and academic teachers to collaborate in developing a balanced curriculum—one in which such studies as English, science, mathematics, graphic arts, and electronics would collectively enlarge understanding of the workplace, and, in turn, correct some of the traditional perceptions and stereotypes described here. The Commission believes that both general and vocational education leaders must undertake to integrate their curricula and demonstrate the co-equal importance of academic and vocational learning. In doing this, we will be more responsive to the unique needs of all students in our nation's secondary schools. (p. 8)

It is as unfair to limit the vocational education opportunities of academic students as it is to stigmatize those who are in the programs. We need an enriched vocational curriculum that serves all students, regardless of their academic ability or aspirations. We should give all students a balanced mix of academic and vocational experiences for all learners and not stigmatize such courses as the exclusive preserve of special groups.

Students who concentrate their course work in vocational program areas generally spend, during grades 11 and 12, less than half of each school day in vocational classes. Now, since the push for increased graduation requirements, students may be spending even more time on required courses. The pendulum is swinging away from locally determined requirements for high school graduation to a highly structured academic curriculum, mandated from the state level, that gives students little choice.

But requiring more abstract academic learning and giving students and parents fewer opportunities to select experiences with concrete, meaningful, useful learning will not necessarily be helpful to millions of young people in the decades ahead. What is required, then? Balance and quality in the curriculum will serve students better than narrowness and quantity. We need multiple alternative strategies to help those students who experience difficulty—who are bored, frustrated, alienated, or angry—to master basic material and see how abstract courses and concepts relate to real-life experiences.

Work is as relevant to most adult Americans as death and taxes. Work is directly relevant to teenagers as a critical and necessary step to adulthood. Presenting subject matter in a form and manner that makes it more meaningful and significant to the learner is an aspect of quality. If a student cannot see the significance of the subject matter—cannot make sense of it—then that student cannot incorporate that subject matter into his or her own life and behavior.

Courses that are labeled "academic" can provide vocational preparation for students who will work in many fields. For example, instruction in speaking and writing, usually labeled "academic," is clearly vocational in nature for the prospective lawyer or teacher. At the same time, instruction in plant physiology or cell biology may be considered vocational for the prospective greenhouse operator or farmer. From the students' point of view, requiring more work in conventional "academics" and less work in other areas is counterproductive.

Despite "related" courses such as business English, students perceive vocational courses as time for doing, not thinking; as easy, not difficult; and as practical, not abstract. In the same way, students perceive courses in physics, mathematics, or civics as time for thinking, not doing; as difficult, not easy; and as abstract, not practical. Both perceptions are severely limiting to students, but perpetuated by the traditions and practices of the

schools. Until courses in both the academic and vocational areas become more permeable, more related, an integrated vocational and academic curriculum will be difficult to achieve.

The problems and possibilities in vocational education mirror those in academic education. In both areas, learning is compartmentalized into arbitrary pockets called "courses." Students are seldom asked and seldom expected to integrate skills and knowledge across these courses. Opportunities for rote learning, applicative learning, problem solving, and creativity are inherent in academic and vocational courses alike; similarly, enriching and boring experiences take place in both realms.

Curriculum developers in the schools must conceptualize knowledge, devise organizational arrangements, develop instructional methods, and implement administrative procedures that will assure students opportunities to experience the interrelatedness of ideas, the implications and applications of knowledge, and the process of discovery, dissemination, and use of information. The totality of this educational experience can and must be relevant—to the student and to the real world. The artifacts of funding, legislative requirements, and policies regarding "tracking" in the school dare not deny young people access to valid information and experiences from any field.

What is really required today are programs and experiences that bridge the gap between the so-called "academic" and "vocational" courses. The theoretical and empirical bases as well as the practical and applicative aspects of academic courses and vocational courses must be made explicit and meaningful. This calls for joint effort between the academic teacher and vocational teacher. (pp. 12-14)

The following article is reprinted from Parks and Henderson (n.d., pp. 1-4).

"CAN DO" ARTICLE

The legislative provisions in the Perkins Act that encourage the strengthening of academic foundations of vocational education programs are welcomed and applauded. The liberal interpretation of these provisions—to encourage courses and instructional strategies for teaching principles of math and science via practical application—provides a necessary staple to the vocational education diet. The more broad, global interpretation of the legislative intent—to consider academic and vocational course work as a fused, coordinated curriulum for all students—is tempting food for thought.

The 31 words of Title II, Section 251, a(11) of the Perkins Act provide the major impetus to strengthen academic foundations of vocational education. This legislative provision indicates that states may use funds for—

> the conduct of special courses and teaching strategies designed to teach the fundamental principles of mathematics and science through practical applications which are an integral part of the students' occupational program

Though some may look upon the "may" component of the legislation as weak, this legislative statement is highly significant. Efforts to strengthen academic foundations, not highlighted in previous vocational education law, signal a recognition of the importance of underlying academic principles applied to vocational education. This signal has the potential of being highly influential to state legislators and state and local policymakers. Further, the legislative provision gives credence to the long-held belief of many educators that the mutually exclusive approach to curriculum is no longer applicable. Business and industry, the compass for direction in vocational education, has supported this notion for some time. At a local level, employers have repeatedly voiced the need for academic skills as foundational to vocational skills. In *High Schools and the Changing Workplace: The Employers' View*, business/industry leaders recommended core competencies vital for almost every job. The competencies, transferable in nature and essential for adaptability, include a significant emphasis on academics.

It must be pointed out, however, that business and industry representatives did not request more academics per se, but *applied* academics. Such requests have frequently been misinterpreted, as expressed by Janet Hunt, Standard Oil of California, in *A Nation at Work: Education and the Private Sector*:

> A good example of misreading industry feedback to educational needs is the back-to-basics backlash. Industry people have been strongly advocating better business-English skills training and . . . this has been interpreted by some legislators/educators as four years of English literature.

Composers of legislation should be commended for providing language that stresses application of academics that are an integral part of the student's vocational program. They did not request *more* academics—a quantitative crevice out of which many critical education reviewers have not yet climbed.

Purpose, Priorities, and Potential

Application of this legislative provision has exciting potential. It provides a "WE CAN" approach not only to vocational education curricula but also to education curricula as a whole. With the general intent of the legislative provision—

WE CAN assist students with lifelong learning skills. Clearly, academics are fundamental to occupational programs, but they are significant factors, as well, in learning how to learn. This learning-how-to-learn is paramount to the retraining and reorienting of individuals encountering new jobs, which occurs five to seven times in the average person's work life.

WE CAN motivate students to learn both the vocational and academic skills. In *The Unfinished Agenda*, the National Commission on Secondary Vocational Education noted that vocational education is frequently "the catalyst that reawakens" student interest in school and "sparks a renewed interest in academics." This reawakening and sparking of interest has been evident in vocational programs in Ohio that have stressed applied academics.

WE CAN broaden opportunities for academic students. Students in the college preparatory track who have the opportunity to see the theories of math, science, or communication put to practice have a scope that is widened in terms of realism. The meaning of the subject matter is expanded.

WE CAN alter the perception of the public toward certain disciplines. Schools in which the vocational programs encompass principles of mathematics, physics, chemistry, and advanced communication will foster a more positive image of both vocational and academic programs.

WE CAN be pace-setters in the educational arena. Critics have urged that education needs to be more applied, more concrete, more related to the real world. A basic and accepted principle of teaching and learning relates relevancy and application to increased comprehension. Despite this, many academic classes function with little or no application. Vocational education, on the other hand, has by its very nature a history of applied learning. The marriage of vocational and academic content can provide the vocational education community opportunities for leadership in instructional design.

WE CAN help vocational students accelerate the pace and depth of understanding of their skill development. When students comprehend the principles upon which the application of knowledge is based, they will be better equipped to see application and relevancy of newly evolving knowledge. This will allow a greater level of efficiency and effectiveness in the classroom and on the job.

The following statement is reprinted from unpublished materials used by the Covington Independent Public Schools to describe their program.

CHAPMAN ACADEMIC/VOCATIONAL DIVISION
COVINGTON INDEPENDENT PUBLIC SCHOOLS

Providing a complete education to each student is the foundation of all educational efforts. Traditionally, two avenues have been open to students: academic education and vocational education. Both of these approaches possess unique characteristics and rich traditions. Both of them contribute, in their own ways, to the total education of any student.

Administratively, it has been practical to administer these approaches separately, since instructional delivery has been somewhat different. However, academic and vocational education share the same fundamental goal, total education for each student. By focusing on the needs of the learner, the Chapman Academic/Vocational Division demonstrates how academic and vocational education works cooperatively to meet the total learning needs of students.

In general, students are interested in learning what they need to know to become employed and function successfully in the world. Their implied, though sometimes unperceived goal, is to acquire *the ability to learn*, a skill they carry with them after they leave institutionalized education. The Chapman Division combines its resources toward the goal of teaching students how to learn and how to participate productively in society.

The ability to learn can be described most simply as the ability to solve problems, whether they be of an ethical, technical, mathematical, or communicative nature. Problem solving includes such skills as analysis, conceptualization and evaluation, uniquely human functions that we all possess, to some degree. Because learning is a *process*, it includes, but is not limited to, the acquisition of skills and knowledge. Academic and vocational education each provide unique opportunities to students to learn the skill of problem solving, as it applies to many situations. It is this underlying process which allows the disciplines to complement each other, while still retaining their uniqueness.

Because learning is a process, it must be approached in step-by-step fashion, to accommodate students' growing maturity and gradual building of a skills repertoire. For this reason, the curriculum at the Chapman Academic/Vocational Division of Holmes High School meets each student at the appropriate level of need and ability and guides each student through a logical progression of sequenced learning to a level of essential competency to function successfully in the world.

Because the goal of the Chapman Academic/Vocational Division is to educate the *whole* student, the curriculum also aids the student in acquiring important life survival skills, employability skills, civic and leadership development skills.

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